# An Ecological Approach to Organizing Forests for Woodlot Management

by
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The classification of **site types** as presented in the "ecological organization" section of this report, follow the approach outlined in Pojar *et al.* (1987). This approach is presently under review and may result in a modifie application of site type criteria.

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## ABSTRACT

A stand-specific approach to organizing a woodlot for management is proposed. It is based on a thorough knowledge of the ecological characteristics of the forest and an analysis of the treatment opportunities. Central to this approach is a classification of forest ecosystems. Within this framework, forest stands are characterized and the information is presented in a manner that facilitates planning and operations.

The classification and characterization of forest sites in the study area is organized at four levels: compartment, subcompartment, stand, and working group. Compartments are administrative units; subcompartments are ecologically based units with characteristic responses and sensitivities to treatment; stands are relatively homogeneous in site properties and forest cover; and working groups are stands arranged according to management objectives. Appropriate silvicultural regimes are described for the working groups, and stand map and stand description and planning tables are provided as basic management tools.



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# 1 INTRODUCTION

There is growing interest in British Columbia in practicing forestry on woodlots on both Crown and private forest land. In the Vancouver Forest Region, opportunities are greatest in second-growth forests on the lower mainland coast, the Gulf Islands, and east Vancouver Island, where the value of existing stands can be enhanced through purposeful small-scale management. In addition to providing timber products, woodlot management can improve other forest resources such as wildlife, recreation, and water supply, while at the same time increasing community knowledge and appreciation of forestry.

The B.C. Ministry of Forests is promoting small-scale forestry through its woodlot licence program. The objective of the program is to enhance productivity on small scattered parcels of Crown forest land, as well as suitable private land, according to sound resource management principles.

The benefits from small-scale woodlot forestry can only be fully realized through a well-organized management plan that is based on a thorough knowledge of the forest resource. This resource is a product of the environment, especially the soil and climate. Any forest management decisions must be made with this in mind to ensure that treatments are appropriate for given ecosystems and, thus, that present productivity is maintained or improved.

This report describes an approach to woodlot management that embraces the ecological characteristics of the basic unit of management — the forest stand. Through the procedure of site classification, forest stands can be organized so that silvicultural treatments can be applied most effectively to meet management objectives. This approach is not new; similar procedures are practiced in countries where intensive forestry is well established. It was also described in a study conducted on Lasqueti Island (Green *et al.* 1987). Thus, much of the forest organization and planning concepts, as well as the silvicultural treatment descriptions, are common in forestry literature. Much of what makes forestry a local science, however, are the ecological characteristics of the trees in a given environment — i.e., silvics and site ecology. The main purpose of this report is to propose a framework in which to apply ecological principles to describing and organizing forests for small-scale forest management in British Columbia.

## 2 STUDY AREA

The study area is located on Saltspring Island, British Columbia approximately 3 km southwest of Fulford Harbour (48° 45' N, 123° 29' W) (Figure 1). It occupies 29.8 ha of an unsurveyed portion of the northeast 1/4 of Section 43, south Saltspring Island, Cowichan Land District. Its southern boundary is delineated by a trail leading to Hope Hill.

FIGURE 1. Location of the study area.

Most of Saltspring Island is within the Drier Coastal Douglas-fir (CDFa) biogeoclimatic subzone, changing to the wetter subzone at higher elevations (350-450 m) (Klinka *et al.* 1979). The study area straddles this elevational break, but better represents the wetter subzone because of the northeast to east aspect. This climate is strongly influenced by the rainshadow cast by the Vancouver Island Ranges and Olympic Mountains, which can create severe summer moisture deficits. The maritime influence moderates seasonal temperatures, and overall it can be described as a summer-dry, cool mesothermal climate. Table 1 gives some climatic background from a long-term station on the island.

TABLE 1. Climatic data from Saltspring Island ([48° 51' N, 123° 30' W] 73 m above sea level [Environment Canada 1982])

| | |
|---|---|
| Mean annual precipitation | 1065 mm |
| Mean precipitation of the driest month | 24 mm |
| Mean precipitation of the wettest month | 194 mm |
| Mean precipitation April - September | 222 mm |
| Mean annual snowfall | 75 cm |
| Mean annual temperature | 9.8 °C |
| Mean temperature of the warmest month | 17.0 °C |
| Mean temperature of the coldest month | 2.9 °C |
| Number of months with mean temperature over 10°C | 6 |

The underlying bedrock of the study area is a mixture of meta-sedimentary, volcanic, and granitic rock. The parent materials are mainly glacial till, with colluvial deposits occurring on very steep slopes. The area is above any glaciomarine deposits which are common in the adjacent lowlands. Soils are predominantly coarse textured (sandy loam), with localized finer textured soils in some draws and depressions. Slopes average approximately 30%, but range from flat to very steep (>80%). The elevation ranges from 200 to 400 m above sea level. The soils are mostly Orthic Dystric Brunisols (van Vliet *et al.* 1987), with thin Mor or Moder humus forms.

The area was logged 40-80 years ago and few remnants of the original old-growth timber are left, apart from the marginally productive and sparsely forested rock outcrops and ridges. Some selective logging of Douglas-fir (*Pseudotsuga menziesii*) has since taken place. Subsequent to harvesting and some fire disturbance, the forest has been left to regenerate naturally. This has resulted in a mosaic of stands of variable species composition and age. Over most of the area, Douglas-fir is the dominant tree species, especially on drier upper slopes where it forms pure stands.

Western redcedar (*Thuja plicata*) and western hemlock (*Tsuga heterophylla*) generally form minor components of these stands, although a few are dominated by redcedar, particularly where selective logging of Douglas-fir has occurred. In general, the climate of this area is not favourable for the productive growth of western hemlock. In wetter sites and on decaying wood substrates it contributes to understory regeneration; however, it will not develop significantly in the upper canopy. Red alder (*Alnus rubra*) may form pure stands as a result of disturbance on the wetter sites, especially along stream edges and in depressions. Otherwise, this shade-intolerant species occurs only as a minor component in the upper canopy of predominantly coniferous stands. Other species occurring with less frequency include arbutus (*Arbutus menziesii*) on the driest sites and grand fir (*Abies grandis*) on moister sites. Western white pine (*Pinus monticola*) and bigleaf maple (*Acer macrophyllum*) are rare.

# 3 APPROACH

The approach used is based on the premise that, to manage a forest effectively, one needs to know as much as possible about its characteristics and its treatment opportunities on a stand-specific basis, and then needs to organize this information in a way that enables operations to be planned and carried out efficiently (Davis 1966).

Central to this approach is the delineation of forest stands, which are the basic operational units. The term "forest stand" has been interpreted in a number of ways in forestry usage and has often been interchanged with terms such as forest cover, forest crop, and occasionally, forest site. In this study the following definitions were adopted:

1. forest site — every part of the forest environment that is relatively uniform in climate, topography, and soils, and as such, has a certain biotic potential (capacity to produce trees and other vegetation) (Klinka *et al.* 1984).
2. forest vegetation — all vegetation on a forest site.
3. forest cover — that part of the forest vegetation composed of trees.
4. forest stand — an area of land sufficiently uniform in site properties and forest cover (composition, structure, age, vigour) that it is distinguishable from adjacent areas and forms a silvicultural entity (modified from Society of American Foresters [1971], which implies uniformity of site in the definition, rather than stating it).

Thus, according to these definitions, a forest cover of 30-year-old Douglas-fir growing on shallow, rocky soil represents a different stand from that having similar forest cover but growing on deep, well-drained soil, because of the distinctly different soil properties. As well, an area of 30-year-old Douglas-fir and one of 150-year-old Douglas-fir, both growing on the same deep, well-drained soil, represent two different stands. These examples show how important a basic understanding of the ecological relationships between forest cover and site is. With such information, the productivity potential of a site can be predicted and suitable silvicultural regimes developed.

Using this approach results in the production of: a map showing stand distribution in the woodlot, with stands numbered individually; a classification and description of the site types found in the woodlot; tables showing the relationships between sites, stands, and final groupings for which silvicultural regimes are developed; and descriptive tables which show characteristics of each stand and its treatment opportunities. From these last tables, a number of different summary tables can be produced to aid in planning and operations.

Although the information required for the initial organization of a woodlot is fairly detailed, once the organization is in place it serves as the management base for the duration of the woodlot's existence. Only updates to register modifications to the stands and silvicultural regimes, if necessary, are required. Figure 2 shows a summary of the basic steps in organizing the forest for management.

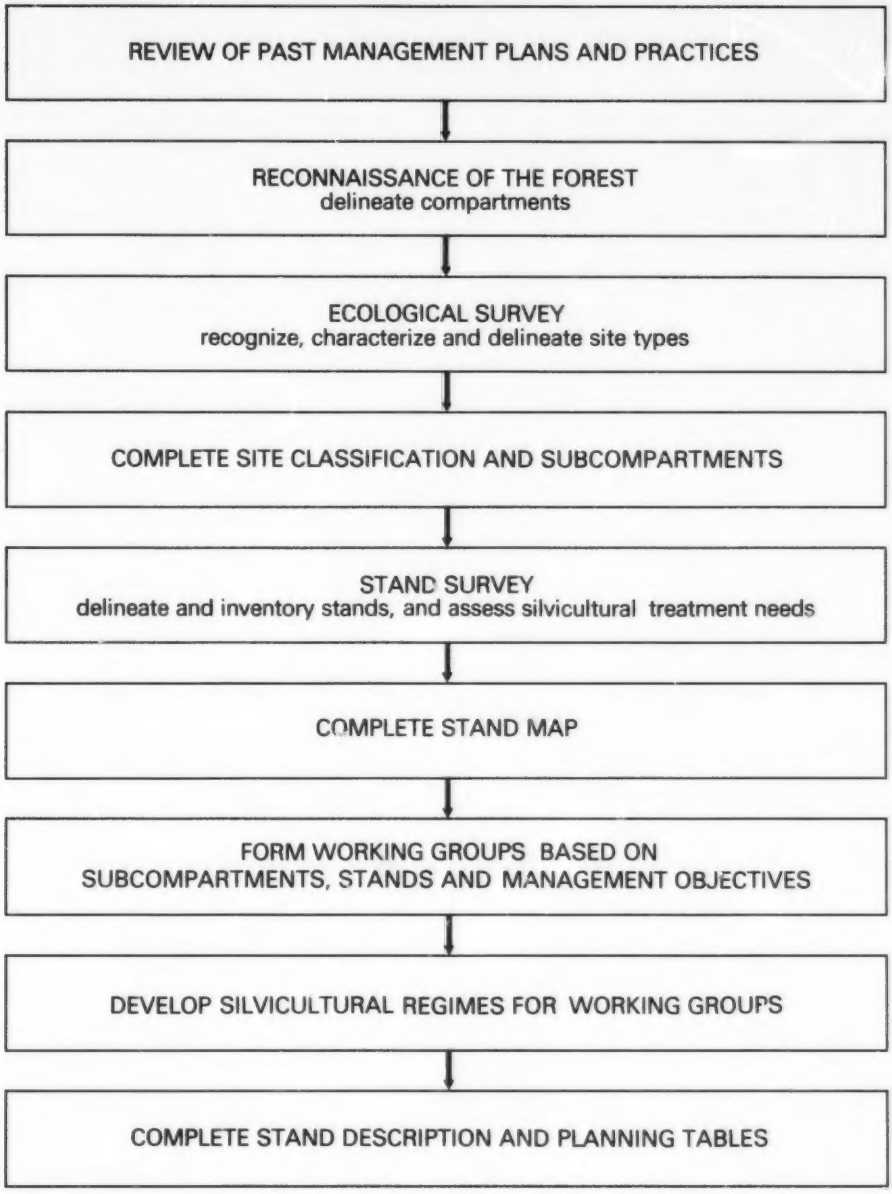
REVIEW OF PAST MANAGEMENT PLANS AND PRACTICES
RECONNAISSANCE OF THE FOREST
delineate compartments
ECOLOGICAL SURVEY
recognize, characterize and delineate site types
COMPLETE SITE CLASSIFICATION AND SUBCOMPARTMENTS
STAND SURVEY
delineate and inventory stands, and assess silvicultural treatment needs
COMPLETE STAND MAP
FORM WORKING GROUPS BASED ON
SUBCOMPARTMENTS, STANDS AND MANAGEMENT OBJECTIVES
DEVELOP SILVICULTURAL REGIMES FOR WORKING GROUPS
COMPLETE STAND DESCRIPTION AND PLANNING TABLES

FIGURE 2. The basic steps in forest organization.

# 4 METHODS

Before the field survey, background information (topographic, soils, and geology maps) for the area was collected and reviewed. Colour air photos at 1:10 000 scale and a 1:2500 colour enlargement were obtained. To produce a preliminary legend of site types, a reconnaissance of the area was made to check access and assess ecological characteristics . Tentative boundaries were typed on the photo enlargement, using forest cover and site features. A traverse line was drawn to pass through all recognized units. Potential sample areas representing different sites were located along the traverse line. In the field, the line was followed to check tentative site type boundaries. Rectangular plots of 100 - 400 $m^2$ were randomly placed within the potential sample areas, with a total of 23 plots being established.

Within each plot, environmental and indicator plant analyses were carried out following procedures of Klinka *et al.* (1984). Biogeoclimatic units were identified using the Vancouver Forest Region biogeoclimatic map (Nuszdorfer *et al.* 1985) and information from Klinka *et al.* (1984). This information, together with that from related studies (Hirvonen *et al.* 1974; McMinn *et al.* 1976; Eis and Craigdallie 1980) was used to complete site type classifications and to arrange them into subcompartments (see Section 5.2.2).

Forest cover variability within subcompartments was then assessed. If a subcompartment delineation was uniform in forest cover, it formed a single stand; if not, it was subdivided into two or more stands. The minimum stand area delineation shown on the map was 0.1 ha. The 23 plots established for the ecological survey were also used for the stand survey. Within each plot, all trees with dbh over 7.5 cm were calipered in 5 cm dbh classes and several heights through the range of diameters were measured. These heights were used to select matching height over diameter curves (B.C. Forest Service 1976a). Stand volumes were calculated using standard whole stem equations (B.C. Forest Service 1976b). Site index and growth class were determined from site index (m/100 yr) curves (B.C. Forest Service 1979).

Additional observations were made on insect and disease problems, wildlife, and general stand conditions. Requirements for silvicultural treatments such as spacing or thinning were also assessed. The objective of the stand survey was to sample stands sufficiently so their characteristics could be appraised within a range of accuracy adequate to allow management decisions. This form of inventory (sometimes termed "unit-area inventory" Davis [1966]) provides localized, stand-specific information for management planning.

# 5 FOREST ORGANIZATION

Forest organization involves both ecological and operational organization (Figure 3). The ecological organization is concerned with classifying the forest according to its ecological characteristics at a level appropriate for management. For this purpose, site types were used — a category within the system of biogeoclimatic ecosystem classification (Pojar *et al.* 1987).

Operational organization arranges the forest into administrative units (compartments), integrates site types according to similarities in treatment suitability (subcompartments), stratifies subcompartments on the basis of forest cover (stands), and groups stands together on the basis of similar management objectives (working groups).

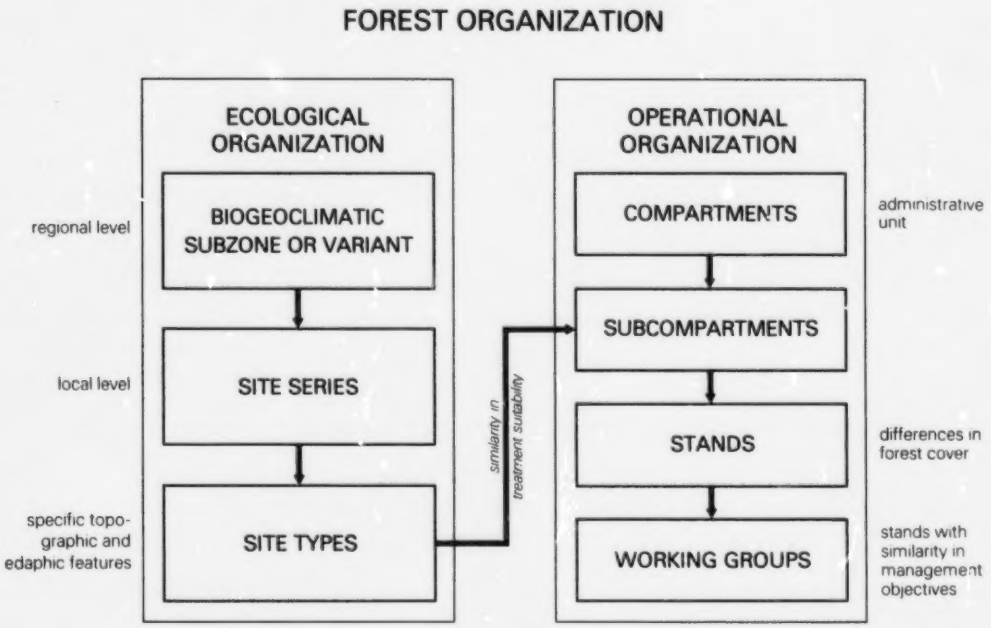


FIGURE 3. Relationship between ecological and operational categories used in forest organization.

## 5.1 Ecological Organization

A forest site represents a segment of landscape which has a characteristic range of environmental properties such as climate, topography, and soils, and which has the potential to produce a certain kind of vegetation community. Different forest sites result from changes in these environmental properties. Site classification groups similar forest sites into classes, helping to simplify their apparent complexity and making them more easily recognizable and understandable.

Forest sites are classified in this study at two major integration levels using the biogeoclimatic ecosystem classification (Pojar *et al.* 1987). At the **regional** level, the broad influence of climate is recognized. Large geographic areas affected by similar climate can be classified and delineated on the basis of patterns of vegetation. Classes used from this level are called biogeoclimatic subzones or variants, such as the Wetter Coastal Douglas-fir subzone (CDFb) in which the study area occurs.

At the **local** level, variations in specific sites occurring within the influence of regional climates are recognized. In the classification at this level, two hierarchical categories were used: site series and site types. **Site series** represent forest sites that occur within particular biogeoclimatic subzones or variants and that are similar in soil moisture and nutrient regimes and, therefore, in the kind and vigour of vegetation they can potentially support. Individual sites making up a particular site series may vary in specific environmental features such as slope, aspect and soil texture. However, the combined effect of these features results in the same potential vegetation. The names of site series have two components: the first is a symbol for the biogeoclimatic subzone or variant, and expresses climate; the second is the name of one or two commonly occurring indicator plant species, and connotes soil moisture and nutrient regimes. For example, one site series found in the study area is named CDFb: Salal - Oregon-grape.

The second category, **site type**,[1] represents a division of site series made according to specific soil or topographic features which are considered to be significant for forest management. They are named by adding one or two descriptive adjectives to the site series name. An example is the CDFb: Salal - Oregon-grape sloping-loamy skeletal site type. Site types are the most specific units recognized and form the basis for subsequent forest operational organization. Table 2 lists the site series and site types found in the study area. The CDFb symbol is excluded from the name as all units occur within the same biogeoclimatic subzone. More detailed characteristics can be found in Table 4 and Appendix 1.

TABLE 2. Synopsis of site series and site types distinguished in the study area

| Site series | Site type | Symbol |
|---|---|---|
| Douglas-fir - Arbutus | /rocky[a] | Fd-Ar/r |
| Salal | /shallow | Sa/sh |
| | /shallow-sloping | Sa/sh-sl |
| | /loamy skeletal | Sa/lsk |
| Salal - Oregon-grape | /sloping-loamy skeletal | Sa-Or/sl-lsk |
| | /loamy skeletal | Sa-Or/lsk |
| Sword fern - Oregon-grape | /steep sloping-loamy skeletal | Sw-Or/ssl-lsk |
| | /loamy | Sw-Or/l |
| Sword fern | /gleyed | Sw/g |

[a] See Table 3 for definitions of site type adjectives.

The edaphic features used to define site types can change gradually or abruptly over an area, depending on the complexity of bedrock geology, parent materials, and topography. Flexibility in differentiating site types is required to accommodate this variability. While a number of different adjectives are used to name the site types, these can be ranked in order of precedence according to management and productivity constraints (Table 3). For example, sites that were both rocky and sloping were named using the rocky adjective. In this case, the criteria

[1] The approach to classification of **site types**, is presently under review. For more information see page ii.

TABLE 3. Definition of adjectives used to differentiate site types

| Adjective | Definition |
|---|---|
| Rocky | Sites that have exposed bedrock on > 25% of the ground surface and extremely shallow (< 25 cm) soil depth |
| Shallow | Soils that are < 50 cm deep |
| Steep sloping | Sites that have a slope gradient > 60% |
| Sloping | Sites that have a slope gradient of 35 - 60% |
| Gleyed | Soils that feature dull grey colours and/or mottles resulting from permanent or periodic saturation within 50 cm from the surface |
| Loamy skeletal | Soils with loamy or sandy loam texture and > 35% coarse fragments by volume |
| Loamy | Soils with loamy or sandy loam texture |

for rocky have more serious implications to tree growth and site sensitivity than does sloping terrain. Adjectives for other areas may require different precedents, and ranks may change. Adjectives can also be combined. Conceivably, all adjectives (alone or in combination) could be used in an environmentally diverse area if the constraints to both management and productivity warrant this. In most cases, however, simplifications can be made. In undulating topography where slope gradients vary frequently around 35%, it may be practical to recognize a single type as "sloping". Some soils vary considerably in their coarse fragment content. Where skeletal and non-skeletal soils are encountered over short distances, one adjective may be sufficient. Finally, types that cover a small proportion of an area may not warrant recognition.

## 5.2 Operational Organization

The stands making up a woodlot have to be organized in a way that facilitates planning and operations. Four organizational categories are recognized: compartment, subcompartment, stand, and working group (Figure 3).

### 5.2.1 Compartment

Compartments are the broadest category of organization. They are permanent subdivisions of the woodlot, with fixed boundaries such as rivers, creeks, and ridges, or other easily recognizable natural or man-made features such as roads and powerlines. Compartments stratify the area into more manageable parcels for administration (e.g., summarizing stand features, treatments, etc.) and operations (e.g., stands can be identified and located). The size of compartments varies from 10 to several hundred hectares, depending on the size of the woodlot and the management objectives. In this study, the area chosen for demonstration was represented by one compartment.

### 5.2.2 Subcompartment

Site classification yields a number of site types that are suited to different management practices. In some cases, two or more site types can be grouped together for management purposes because they are similar in their characteristics and response to treatments. Site types distinguished in the study area were assessed and interpreted in relation to:

1. the most suitable tree species for management;
2. site productivity; and
3. sensitivity to disturbance (e.g., how fire, soil compaction, soil erosion, or brush competition could affect successful regeneration and forest productivity).

Those site types similar in relation to these factors were grouped together, while site types that differed significantly were kept separate. These final arrangements of site types are called subcompartments (Table 4). They represent permanent landscape units that have relatively stable ecological characteristics and are therefore important for determining appropriate management practices and estimating future yields. Placing two different subcompartments under identical management may result in under-utilization of one or both of them, or, in some cases, in site degradation.

TABLE 4. Characteristics of subcompartments in relation to site types and management properties

| Subcompartment | Site type | Edatope[a] | Productivity[b] | Sensitivity to disturbance[c] | | | |
|---|---|---|---|---|---|---|---|
| | | | | Fire | Erosion | Compaction | Brush |
| a | Fd-Ar/r | 0-1/C | L | VH | H | L | L |
| b | Sa/sh | 1/B | P | H | M | L | H |
| b | Sa/sh-sl | 1-2/B | P | H | M | L | H |
| b | Sa/lsk | 2-3/B | P | M-H | M | L | H |
| c | Sa-Or/sl-lsk | 3/C | M | M-H | L | L | L |
| c | Sa-Or/lsk | 3-4/C | M | M | L | L | L |
| d | Sw-Or/ssl-lsk | 3/D | G | H | H | L | L |
| e | Sw-Or/1 | 4-5/D | G | L | L | M | L |
| f | Sw/g | 6/E | G | VL | L | H | H |

[a] Edatope combines the potential (relative) soil moisture/soil nutrient regime (Klinka *et al.* 1984).
[b] L, P, M, G — potential low, poor, medium, or good growth class for Douglas-fir (B.C. Forest Service 1979).
[c] VL, L, M, H, VH — very low, low, medium, high, very high sensitivity.

Subcompartments provide a link between forest ecological organization and operational organization. This use of the term subcompartment differs somewhat from other definitions. For example, Davis (1966) recognizes subcompartments as temporary subdivisions of a compartment, which encompass stands requiring different silvicultural treatments. In the approach taken in this study, subcompartments are permanent subdivisions that have different treatment suitabilities and sensitivities, determined by ecological properties.

A subcompartment is usually fragmented within the woodlot in relation to the woodlot's ecological diversity. Depending on past history, a particular subcompartment may support considerable variation in forest cover. For example, a subcompartment that has loamy, moist, and nutrient-rich soils may be associated with forest covers of 50-year-old red alder, 10-year-old Douglas-fir, or 200-year-old western redcedar. Subcompartments are identified on the stand description tables and accompanying stand map by a lowercase letter preceding each stand number.

### 5.2.3 Stand

Individual stands are delineated within subcompartments based on forest cover criteria. If the forest is homogeneous in cover, only one stand can be recognized within a subcompartment, but in most cases a number of stands will exist. The stand becomes the basic unit of forest organization because it is relatively homogeneous with respect to important site properties and forest cover. Adjacent stands will either have different forest cover or will be different ecologically (different subcompartments). Either one or both of these differences will require different management considerations.

### 5.2.4 Working group

The small-scale nature of woodlot forestry and the greater flexibility in defining objectives and carrying out treatments are conducive to more efficient use of the forest resource. In addition to producing standard sawtimber, woodlots are particularly well adapted to supplying specialty products such as poles, pilings, shakes, Christmas trees, firewood, and furniture-grade lumber. Management practices can also be designed to meet specific objectives relating to wildlife, recreation, watershed, and other non-timber values. As a result of this flexibility, considerable variety exists in silvicultural regimes and practices applicable to woodlot management.

Depending on stand diversity and management objectives, a subcompartment can be managed under one, two, or more silvicultural regimes. For example, a subcompartment best suited to productive growth of Douglas-fir may currently be constituted of some stands of Douglas-fir and others of western hemlock. Two

silvicultural regimes will be needed to manage the different stands until the hemlock is replaced by Douglas-fir over the entire area. In another example, one subcompartment may include several stands of young Douglas-fir regeneration. It may be decided to manage some stands for sawtimber production and the others for Christmas trees, again requiring two different silvicultural regimes. Thus, the stands can be arranged into working groups according to management objectives and present stand status. In contrast to a subcompartment, a working group is not a permanent land designation. Changes in stand structure or management objectives may lead to modification of working groups.

Table 5 shows the relationship between subcompartments and working groups recognized in the study area. Included are the present stand status, the management objectives, and the final working group designations. Figure 4 shows a synopsis of all units of forest organization for the Saltspring study area.

TABLE 5. Relationship between subcompartments and working groups

| Subcompartment | Working group | Regulation class | Management objectives | Stands within the working group | Present stand status |
|---|---|---|---|---|---|
| a | al | Protection forest | Enhance wildlife and recreation value; occasional sawlog production | a1,2,3,4,5 | Fd[a], Cw (Hw, Ar); patchy |
| b | bI | Production forest | Fd sawtimber | b2,3,4,5,6,8 | Fd (Cw, Hw); irregular density; many openings |
| | bII | Production forest | Christmas trees | b1,7 | Fd, Hw, Cw; irregular density |
| c | cI | Production forest | Fd sawtimber | c1-c9 | Fd, Cw, Hw (Dr); higher density; few openings |
| d | dI | Production forest | Fd, Cw sawtimber; Dr firewood; prevention of soil erosion | d1,2,3,4 | Cw, Fd (Dr); irregular density |
| e | eI | Production forest | Fd sawtimber | e4,5,6,7,8 | Fd, Dr (Cw); irregular density |
| | eII | Production forest | Fd, Cw sawtimber | e2,9,11 | Cw, Fd (Hw, Dr); irregular density |
| | eIII | Production forest | Dr firewood | e1,3,10 | Dr (Fd,Cw,Hw); irregular density |
| f | fI | Production forest | Cw sawtimber | f1,2 | Dr |

[a] See Appendix 4 for tree species symbols.

### 5.2.5 Silvicultural regimes

Once the owner's management objectives are stated and the working groups defined, an appropriate silvicultural regime is developed for each working group. A silvicultural regime describes a program of treatments that should be carried out over a rotation to meet the management objectives. Based on this program, specific treatments are prescribed for the stands within the working group. The result is an indication of what work (if any) is required on each stand during the current planning period (planning periods are usually of 5-10 years duration). Although priorities are assigned to the treatments, the exact schedule of the work and its implementation remain flexible depending on the owner's annual program and the changing economic conditions.

For the Saltspring Island study, silvicultural regimes were proposed for each recognized working group (Appendix 2). Suggested treatments include single-tree, shelterwood, and clearcut regeneration systems; multiple entries for intermediate cuttings, including pruning; and planting, brushing, and site preparation where required. Recommended rotation ages, stocking levels, and pruning intensity are also included. Each regime is designed to achieve a particular management objective. These regimes were developed on the basis of available information, and they represent a level of management intensity greater than that generally practiced in British Columbia. They are intended to demonstrate the approach rather than rigidly define treatments.

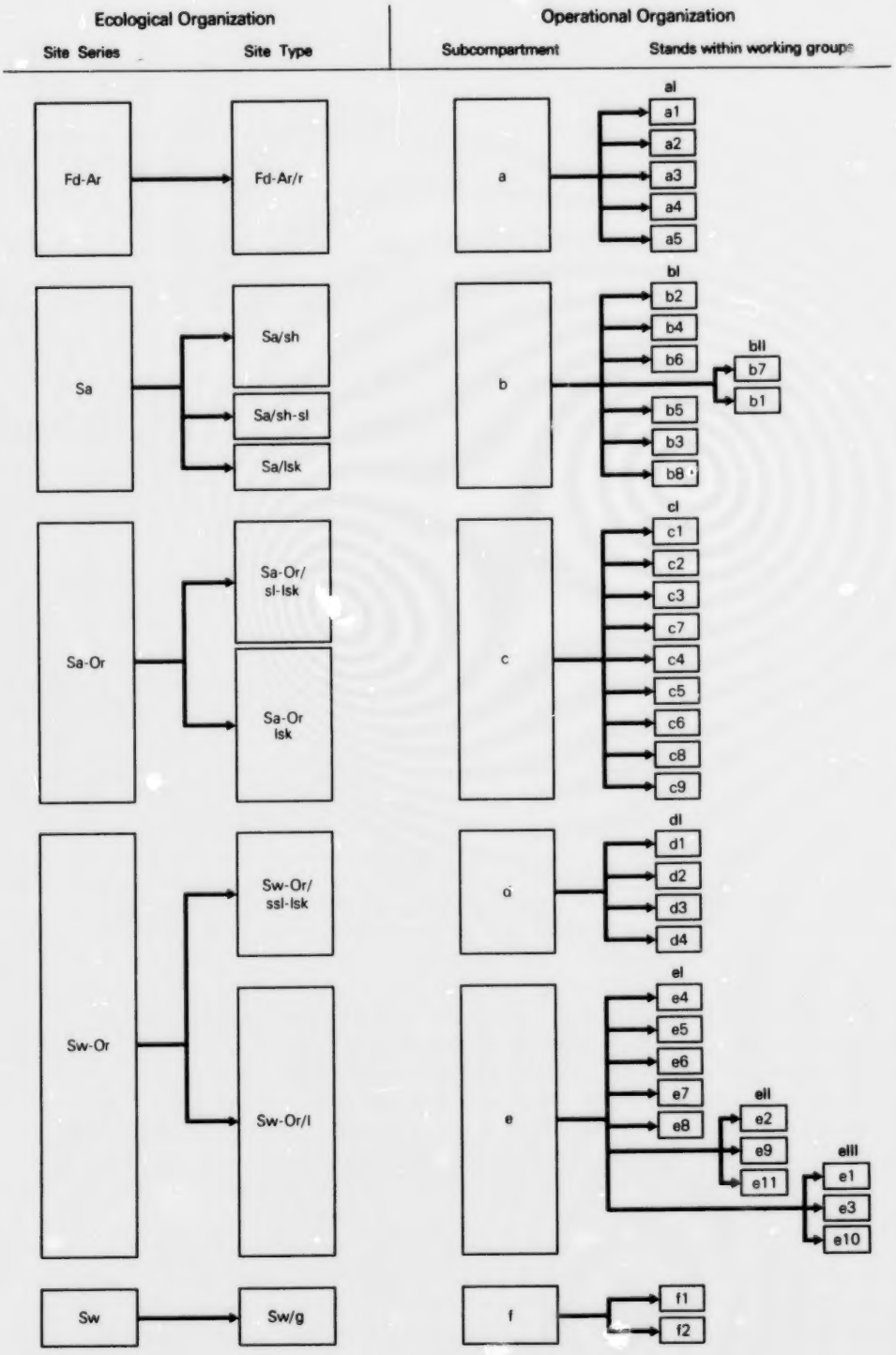


FIGURE 4. Synopsis of forest organization for the Saltspring Island study area.

# 6 BASIC MANAGEMENT TOOLS

## 6.1 Stand Map

A map of the forest is essential for record keeping, location, identification, and orientation. For small woodlots occupying less than 1000 ha, a map scale of 1:5000 or larger is most appropriate. For the study area, the stand boundaries delineated on the working photo were transferred to a base map at a scale of 1:2500. Stands are identified on the map with a two-character symbol (e.g., a4, b2). The letters refer to the subcompartment and the numbers to the stands, which are ordered consecutively for a particular subcompartment. The numeration begins with the most northwest stand of a subcompartment and proceeds clockwise. This symbology produces an uncluttered map, and also indicates the ecological characteristics of each stand. Topographic and cultural features such as contours, creeks, roads, rock outcrops, and trails are displayed on the map to facilitate its use. The stand map for the study area is shown in Appendix 8 (map pocket).

## 6.2 Stand Description and Planning Tables

Accompanying the stand map are tables that contain descriptive and planning information for each stand (Appendices 3 and 4). The tables are cross-referenced to the map, using the stand identification number. Four types of information are provided in the tables: stand identification, stand description (containing mensurational characteristics), stand planning (indicating what silvicultural treatments are required for the stand during the current planning period), and miscellaneous information on management classes and general ecological, topographic, and stand features. Space is also provided for brief notes pertaining to the description and planning sections. Although not included in this study, stand history information containing details of the treatments completed on each stand could be added. This information is currently compiled by the history record system used by the Ministry of Forests to track treatments on Crown forests. A cross-reference to these records is provided for on the stand description table.

With a complete set of records such as this, the woodlot manager knows the location of each stand, its area, its mensurational and ecological characteristics, what silvicultural treatments are planned, and the nature and success of previously completed treatments. The tables are designed so that they could be entered on a database management program for a microcomputer. With such a system, information can be added or modified easily and can be accessed and summarized readily according to user specifications.

## 6.3 Summary Tables

The stand data can be synthesized into a variety of summaries to assist the manager in planning. A basic reference to all stands and non-forested polygons in the woodlot is provided in a compartment summary table (Appendix 5). It lists the area and volume[1] of stands in the compartment according to silviculture class and general forest cover (e.g., coniferous or deciduous). Within the table, stands are sorted by regulation class[2] and growth class.

The example in Table 6 shows a summary of area, volume, and total MAI[3] by age class, according to regulation class. Such information shows the balance of age classes in the woodlot. In this area, most of the forest is concentrated in the 41- to 60-, 81- to 100-, and 101- to 120-year age classes. Under sustained yield management, the objective is to develop a balanced forest with the area more or less evenly distributed among the range of age classes. Thus, management strategies may require postponement of the final harvest in the present 41- to 60-year-old stands to create better age-class distribution. The total MAI (in $m^3$/year) shown in the table is used to calculate the annual allowable cut. In this case, the cut for the 10-year planning period should not exceed approximately 1200 $m^3$.

Another example shows a summary of the volume by species and age class, according to regulation class (Table 7). Such information is useful in market planning. A final example shows a summary of treatments and the expected volume yield by species, from the stands proposed for cutting during the planning period (Table 8). In this example, the total expected yield was 3000 $m^3$, an excess of about 1800 $m^3$ over the MAI of the production

[1] The volumes in all tables are gross volumes at close utilization; the volumes shown as denominators are volumes of veteran trees. (Veterans are remnant trees from a former stand at least 40 years older than the main stand.)
[2] See Appendix 4.
[3] Mean annual increment.

for 10 years. Therefore, adjustments to the proposed treatments are required. One option is to remove stands from the planned cut (see the footnotes to Table 8). Other summaries can be generated from the data, depending on the manager's requirements.

TABLE 6. Summary of area and volume by age class

| Age class | Protection forest | | | Production forest | | | Total | | |
|---|---|---|---|---|---|---|---|---|---|
| | area (ha) | volume[a] ($m^3$) | MAI ($m^3$/yr) | area (ha) | volume ($m^3$) | MAI ($m^3$/yr) | area (ha) | volume ($m^3$) | MAI ($m^3$/yr) |
| 0-20 | 0.1 | | | 0.2 | | | 0.3 | | |
| 21-40 | | | | 3.4 | 640 / 60[b] | 21.3 | 3.4 | 640 / 60 | 21.3 |
| 41-60 | 2.0 | 150 | 3.0 | 8.1 | 2540 / 430 | 50.8 | 10.1 | 2690 / 430 | 53.8 |
| 61-80 | 0.1 | 10 | 0.1 | 0.6 | 290 | 4.1 | 0.7 | 300 | 4.3 |
| 81-100 | 1.7 | 340 | 3.8 | 2.4 | 1690 | 18.8 | 4.1 | 2030 | 22.6 |
| 101-120 | | | | 4.4 | 1670 | 15.2 | 4.4 | 1670 | 15.2 |
| 121+ | | | | 3.1 | 1310 | 10.9 | 3.1 | 1310 | 10.9 |
| Total | 3.9 | 500 | 6.9 | 22.2 | 8140 / 490 | 121.1 | 26.1 | 8640 / 490 | 128.1 |

[a] Gross volume at close utilization.
[b] Denominator values are volumes of veterans which form minor proportions of stands.

TABLE 7. Summary of volume by species and age class

| Age class | Protection forest volumes ($m^3$) | | | Production forest volumes ($m^3$) | | | |
|---|---|---|---|---|---|---|---|
| | Fd | Cw | Hw | Fd | Cw | Hw | Dr |
| 0-20 | | | | | | | |
| 21-40 | | | | 540 / 30[a] | 0 / 30 | | 100 |
| 41-60 | 120 | 20 | 10 | 1350 / 80 | 240 / 330 | 140 / 30 | 810 |
| 61-80 | 10 | | | 160 | 80 | 50 | |
| 81-100 | 200 | 70 | 70 | 330 | 1070 | 190 | 100 |
| 101-120 | | | | 880 | 480 | 310 | |
| over 120 | | | | 750 | 370 | 180 | 10 |
| Total | 330 | 90 | 80 | 4010 / 110 | 2240 / 360 | 870 / 30 | 1020 |

[a] Denominator values are volumes of veteran trees.

In addition to being summarized in tabular format, such information can be portrayed on the stand map. This transforms the basic stand map into a number of special-purpose maps which facilitate planning and operations. Appendix 9 (map pocket) shows an example displaying the distribution of working groups in the woodlot; Appendix 10 (map pocket) shows the distribution of planned treatments. A variety of other maps can also be produced, displaying such information as distribution of age classes, species, growth classes, and regulation classes.

TABLE 8. Summary of proposed cutting

| Cutting | Stand number | Area (ha) | Expected volume by species | | | | Total volume ($m^3$) |
|---|---|---|---|---|---|---|---|
| | | | Fd ($m^3$) | Cw ($m^3$) | Hw ($m^3$) | Dr ($m^3$) | |
| Thinning | b2 | 0.6 | 10 | | | | 10 |
| | b4 | 0.5 | 10 | | | | 10 |
| | b8 | 0.3 | 10 | | | | 10 |
| | c4 | 1.3 | 30 | | | 60 | 90 |
| | c7 | 0.5 | | | 30 | | 30 |
| | c8 | 0.4 | 10 | | | | 10 |
| | e4 | 0.1 | | 10 | | | 10 |
| | e8 | 0.6 | 10 | | | 60 | 70 |
| Improvement | c1 | 0.7 | 20 | 10 / 20[a] | | 10 | 40 |
| | c2 | 0.7 | 10 / 10 | 0 / 10 | | | 10 / 20 |
| | c6 | 1.2 | 70 / 20 | 0 / 30 | | | 70 / 50 |
| | e5[2] | 1.9 | 50 | 0 / 50 | 80 | 170 | 300 / 50 |
| Subtotal | | 8.8 | 230 / 30 | 20 / 110 | 110 | 300 | 660 / 140 |
| Pruning | b2 | 0.6 | | | | | |
| | b4 | 0.5 | | | | | |
| | b8 | 0.3 | | | | | |
| | c1 | 0.7 | | | | | |
| | c2 | 0.7 | | | | | |
| | c4 | 1.3 | | | | | |
| | c5 | 1.2 | | | | | |
| | c8 | 0.4 | | | | | |
| Subtotal | | 5.7 | | | | | |
| Sanitation | d1 | 0.2 | | | | | |
| | d2 | 0.4 | | 20 | | | 20 |
| | d4 | 0.5 | | 10 | 10 | | 20 |
| Subtotal | | 1.1 | | 30 | 10 | | 40 |
| Shelterwood | b3[b] | 4.2 | 80 | 230 | 300 | | 610 |
| | b5[b] | 1.9 | 60 | 60 | 20 | | 140 |
| | c3 | 0.4 | 10 | 10 | 40 | | 60 |
| | c5[b] | 0.4 | | 100 | 20 | 20 | 140 |
| | c9 | 0.3 | | 10 | 60 | | 70 |
| | e2[b] | 1.1 | 10 | 380 | 110 | 70 | 570 |
| | e9 | 0.2 | | 60 | | | 60 |
| | e11 | 0.1 | | | 10 | | 10 |
| Subtotal | | 8.6 | 160 | 850 | 560 | 90 | 1660 |
| Conversion | d3 | 0.2 | | | | | |
| | f1 | 0.3 | | | | 90 | 90 |
| | f2 | 0.1 | | | | 30 | 30 |
| Subtotal | | 0.6 | | | | 120 | 120 |
| Clearcut | b1 | 0.1 | 30 | | | | 30 |
| | b7 | 0.7 | 80 | 80 | 100 | | 260 |
| | e1 | 1.3 | 0 / 20 | 0 / 80 | 0 / 10 | 140 | 140 / 110 |
| | e3 | 0.1 | | | | 30 | 30 |
| | e10 | 0.3 | | | | 60 | 60 |
| Subtotal | | 2.0 | 110 / 20 | 80 / 80 | 100 / 10 | 230 | 520 / 110 |
| Grand Total | | 26.8 | 500 / 50 | 980 / 190 | 780 / 10 | 620 | 3000 / 250 |

[a] Denominator values are volumes of veteran trees.
[b] For reasons of cut control, the cutting in these stands is postponed until the next planning period.

# 7 APPLICATION

The stand-specific approach to organizing a forest is recommended for effective management. This approach provides comprehensive information on the condition of individual stands and their treatment needs. The information is integrated within ecological, silvicultural, and administrative frameworks to facilitate planning, and to ensure that ecologically sound practices are followed.

Figure 5 summarizes some considerations in applying the information base to operational planning. The initial step is to identify the short- and long-term management goals. Based on these goals, and on appropriate summary tables, a stand-specific management plan is developed. In essence, the plan indicates what the management priorities are, what operations will be carried out in which stands, and what returns can be anticipated. Although such plans are an administrative necessity, they should be considered an operating base that must be sufficiently flexible to meet changing conditions. Plans develop out of factual information and experience; thus, there should be a close relationship between those who develop the plan and those who implement it.

As the plan is implemented, changes take place in the forest. Some stands will be harvested, some will be modified through various silvicultural practices, some will undergo detailed surveys. As these modifications occur, the information base must be updated. For example, new stand boundaries must be shown on the map if a treatment occurred over several stands or in parts of a stand. The revised stand characteristics must be recorded in the tables, and planning and history records updated. Although the practice of treating entire stands is recommended (e.g., treatments follow stand boundaries), it is not mandatory.

As management gets under way in the woodlot, with operations taking place in an organized fashion and information being updated and summarized as required, planning becomes a continuous function. Plans are reviewed and updated on a regular basis. The information base remains current. At the end of the overall planning cycle (5 - 10 years), all stands should be resurveyed, boundaries checked, and descriptive and planning data updated. A management review of the past planning cycle should also be undertaken to evaluate success of past practices, and a revised plan should be prepared accordingly.

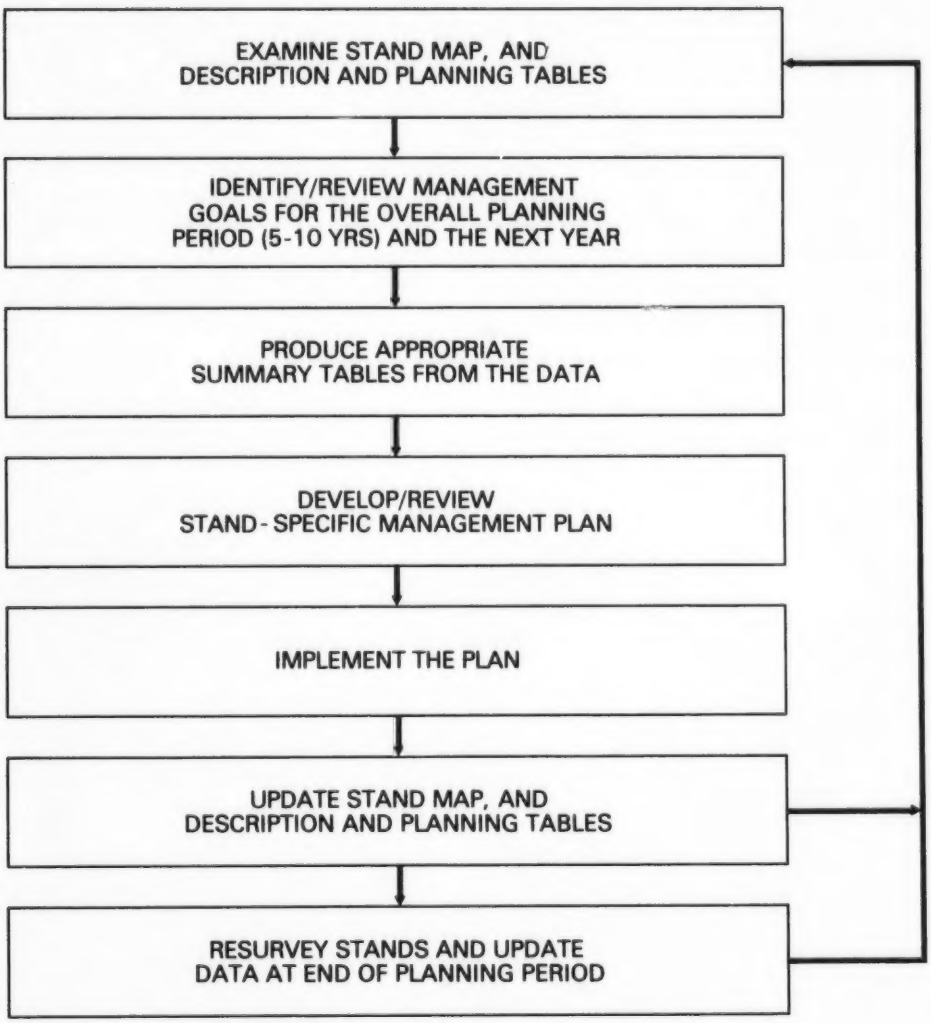


FIGURE 5. Flowchart illustrating application of the information base to operational planning.

# 8 CONCLUSION

The foundation of an effective forest management plan is a comprehensive data base describing the characteristics of the forest, and an efficient organization of this information. The approach proposed in this study meets these requirements. All information, from mensurational features to treatment recommendations, is recognized on a stand-specific basis. Knowledge of each stand, including its geographic location, provides the most useful information for intensive management. In addition, the ecological characteristics of the forest are incorporated into the stand descriptions, and are used in the development of ecologically sound management regimes. This ensures that planned forestry practices will maintain ecological diversity, and that forest productivity will be optimized while site degradation is minimized. This is particularly important on woodlots where the land base is limited.

A large amount of information is generated by such an approach. To facilitate application, this information is organized into a number of categories. Compartments arrange the forest into basic administrative units; subcompartments integrate site types recognized through ecological classification, according to features relevant to management practices; stands represent the basic forest unit, integrating forest cover and ecological characteristics; working groups arrange stands according to similar management objectives. Storing and presenting this information in stand description and planning tables, and on maps, provides a complete and readily available record of the location of each stand, its mensurational and ecological characteristics, and what silvicultural treatments are required. Such a system serves as a comprehensive information base for management planning, and operations in a woodlot.

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## APPENDIX 1. Description of site series and site types

### 1. Douglas-fir - Arbutus site series

Douglas-fir is the most common tree species with western redcedar, western hemlock, and arbutus forming minor components. The distribution of arbutus in the woodlot is limited to these sites. Lodgepole pine (*Pinus contorta*) occurs on Saltspring Island in similar environments, but was not found in the study area. Understory shrubs tend to be clumped on these sites and thus account for little of the vegetation cover. Salal forms a dense, low thicket compared to how it forms in moister environments. Ocean-spray (*Holodiscus discolor*) and baldhip rose (*Rosa gymnocarpa*) are other shrubs that occur with less significance. Forbs are rare but grasses are more common, with early hairgrass (*Aira praecox*) and western fescue (*Festuca occidentalis*) being most abundant. The most complete vegetation strata is the moss layer, which often forms continuous carpets. *Polytrichum juniperinum* and *Rhacomitrium canescens* are the most abundant and indicative of this site series, but *Kindbergia oregana* and *Rhytidiadelphus triquetrus* are also present.

### 1a. Douglas-fir - Arbutus/rocky site type

The Fd-Ar site series is represented by a single site type in the study area. It occurs on upper slopes and ridge crests where shallow soils (< 25 cm) and frequent bedrock exposure create patchy and discontinuous tree cover (Figure 6). Because of the topographic position and physical soil properties, these areas are rapidly drained and subject to severe summer moisture deficits. The shallow soil depth provides little volume exploitable by roots, making these nutrient-poor sites. Moders are the typical humus form. The edatope is 0-1/B. This site type is commonly associated with the Sa/sh and Sa/sh-sl site types.

These are ideal sites for recreation, offering scenic views, both full sunlight and shade, and open space in an otherwise more-or-less continuous forest cover. However, they are highly sensitive to disturbance. Moss carpets are easily scuffed off, exposing bedrock or making the already sparse accumulations of soil further susceptible to erosion. Trails should be located in the more robust areas, perhaps where salal thickets can form a natural corridor or where rock is already exposed.

FIGURE A1.1 Stand a3. Frequent stand openings, moss-covered rock outcrops, and low thickets of salal characterize the Fd-Ar/r site type.

Stands in this site type should be designated as protection forest. Their timber values are marginal and severe disturbance can result from falling and yarding.

### 2. Salal site series

This site series represents what is commonly described as the Douglas-fir - Salal association on the British Columbia coast, and occurs in the CDFb and CWHa biogeoclimatic subzones. Douglas-fir is the dominant tree species; western redcedar and western hemlock are minor components. Occasionally, western white pine may occur, with few large individuals reaching maturity. Salal is the dominant understory shrub. It is only moderately shade tolerant and its abundance is influenced by the degree of crown closure. Depending on the density of salal, mosses — mostly *Kindbergia oregana* — may have significant cover. Herbs and grasses are not common in this site series.

Three site types were recognized in this series, representing variations in soil depth and coarse fragment content.

#### 2a. Salal/shallow site type

This site type typically occurs just below ridge crests where the slope gradient is <35%. In rolling topography with frequent slope changes, this type merges with the Sa/sh-sl type. Otherwise, these types are similar in soil physical properties, with shallow soils representing the most significant site feature. This site type is associated with base-low, granitic-derived soils in the southeast portion of the study area.

The potential productivity of this site type is poor. Its shedding position on the slope and shallow soils limit water supply; the Mor humus form and low base status limits nutrient supply. Control of salal as a brush species is a recommended stand tending operation, since it competes with crop trees for both moisture and nutrients. Douglas-fir is recommended as the most suitable species for this site type, while western redcedar may function as a non-crop nurse species to suppress salal growth. Preservation of forest floor materials is important for soil fertility and moisture retention, and therefore these sites are sensitive to disturbance such as fire.

#### 2b. Salal/shallow - sloping site type

This type occurs where soils are less than 50 cm deep and slopes are moderately steep (35 - 60%). Slope position determines the moisture status of this type: the potential (relative) moisture regime ranges from 1 for upper slopes (which is typical of most of the study area) to 2 for middle or lower slopes. This type does not usually occur in lower slope positions; however, colluvial parent materials with coarse granitic lithology provide the exception. In other respects it is similar to the Sa/sh site type.

#### 2c. Salal/loamy skeletal site type

This site type occurs where the soil coarse fragment content exceeds 35% (by volume) in combination with gentler upper or ridge crest slope positions. This is a rare type in the study area; the salal series is most commonly associated with shallow soils (as above).

The deeper soils and less pronounced slope gradient of this type improve the moisture supply slightly, although significant water deficits still limit forest productivity. Figure 7 illustrates the potential brush hazard from salal on this type, which is generally true for the entire Salal site series.

FIGURE A1.2. Stand b5. Waist-high salal dominates the opening in this stand in the Sa/lsk site type. The 26 m tall, 50 cm dbh, 130-year-old Fd probably represents the maximum size on this poor site.

### 3. Salal - Oregon-grape site series

Salal and Oregon-grape are the characteristic shrub species in this series, with the latter tending to dominate in denser stands and on better aerated soils. For the most part, however, they are equally represented. Douglas-fir is the most frequent species on this site series followed by western redcedar, western hemlock, and, in a minor occurrence, red alder. As in the Salal series, herbs are scarce and mosses are represented by *Kindbergia oregana* and, to a lesser extent, *Hylocomium splendens*.

This site series occurs on middle slopes with varying terrain features. Although mostly associated with moderate slopes (>30%), it also occurs on gentle slopes and flat terrain. Soil depth is usually greater than 1 m. Soils are well drained with sandy loam textures and variable coarse fragment content. Mor or Mormoder humus forms predominate. The edatope is 3-4/C.

The potential forest productivity is medium. This series should be managed with western redcedar as a minor component, since redcedar can benefit forest floor decomposition through its calcium-rich foliage, and can also enhance the natural pruning of Douglas-fir.

### 3a. Salal - Oregon-grape/sloping - loamy skeletal site type

This type typically occurs in mid-slope positions (Figure 8). Soils are well drained, and derived from colluvial or morainal materials that are deep, loamy textured, with a high (>35%) content of coarse fragments.

FIGURE A1.3. Stand c6. Sparse understory vegetation and high natural mortality are featured in this dense (2000 stems/ha) stand of pure Fd in the Sa-Or/sl-lsk site type. Two earlier thinnings could have been applied to control density in this 40-year-old stand.

In many areas, non-skeletal soils intergrade over short distances with skeletal soils (>35% coarse fragments). Generally, the greater the coarse fragment content of the soil, the lower the volume of soil exploitable by roots and the better the drainage and the less the risk from compaction. Although preservation of the forest floor is important to maintaining long-term productivity, it is not as critical as in the Salal site series. It is, however, more sensitive to burning than is the following site type because of its steeper slopes. The edatope is 3/C.

**3b. Salal - Oregon-grape/loamy skeletal site type**

This is a similar site type to the above, but it occurs on gentler (<35%) slopes. The sensitivity to disturbance is essentially the same as the previous type, except for a lower sensitivity to burning. The deep, well-drained soils minimize the erosion potential. Management constraints in terms of access and use of equipment are alleviated on the gentler terrain (Figure 9). Consequently, this site type is well suited to timber production.

FIGURE A1.4 Stand c5. A nearly pure 90-year-old stand of Cw in the Sa-Or/lsk site type. Moderately deep (50-100 cm) sandy loam textured soils in a mid-slope position characterize this medium productivity site type. Fd would have been a more productive primary crop species.

**4. Sword fern - Oregon-grape site series**

Because of the improved moisture and nutrient status, sword fern (*Polystichum munitum*) becomes a common species with Oregon-grape, characterizing this site series.

Unlike previous site series, the herb layer in this one significantly contributes to the understory vegetation. Sword fern is the most dominant herb, followed by stinging nettle (*Urtica dioica*), vanilla leaf (*Achlys triphylla*), and sweet-scented bedstraw (*Galium triflorum*).

The dominance of sword fern versus Oregon-grape varies with locality. Salal may be present to some degree, but it never dominates the understory vegetation and is generally found only on decaying wood substrates. Moss cover varies in significance and is almost solely represented by *Kindbergia oregana*.

The forest cover is composed of irregular mixtures of Douglas-fir, western redcedar, western hemlock, and red alder. Red alder becomes a significant feature of stands with a history of disturbance, and represents a brush hazard for early coniferous stand development. As a stand component, red alder contributes to site nutrient status through its ability to fix nitrogen and to produce readily decomposable litter. This in turn favours the establishment of various nitrophytic plants in the understory, such as sword fern, stinging nettle, sweet-scented bedstraw, and Columbia brome (*Bromus vulgaris*). Douglas-fir is considered to be the best species for management, combined with a minor component of western redcedar.

**4a. Sword fern - Oregon-grape/steep sloping - loamy skeletal site type**

This site type occurs where slope gradients exceed 60% (Figure A1.5). Soils are derived from colluvial materials and are sandy loam textured, with a high coarse fragment content. Occasionally, fragmental soils (>70% coarse fragments) occur. Because of active colluvial processes, intermixing of surface organic materials, mineral soil, and coarse fragments results in a loose, well-aerated soil that can support productive tree growth. However, these features also make it sensitive to disturbances such as slashburning and heavy equipment operation.

FIGURE A1.5. Stand d1. A 70% slope with 80-year-old Fd and minor Cw representing the Sw-Or/ssl-lsk site type. Sword fern and Oregon-grape cover this unstable, colluvial slope.

Single-tree selection could be carried out on this site type so as to maintain a more or less continuous canopy and undisturbed soils. The edatope is 3/D and the potential productivity is good. Management is limited only by sensitive soils.

**4b. Sword fern - Oregon-grape/loamy site type**

The physiography of this site type is typically middle to lower slopes with straight or concave shape (Figures 11 and 12). Deep soils (>1 m) accompanied by few coarse fragments provide ample volume for root growth. In addition, the receiving position on the slope results in nutrient enrichment and increased water supply via seepage. Organic enriched surface soil horizons are commonly found and humus forms occur typically as Moders or Mullmoders. The edatope is 4-5/D. These are close to being the most productive sites in the area and are robust in terms of disturbance sensitivity.

FIGURE A1.6. Stand e3. An almost pure stand of 45-year-old red alder in the Sw-Or/1 site type. The understory vegetation is dominated by Oregon-grape, vanilla leaf, and stinging nettle.

FIGURE A1.7. Stand e9. Another example of the Sw-Or/l site type. This 130-year-old Cw stand occurs in gullied terrain. Although understory vegetation is lacking, the deep soils contain few coarse fragments and the humus form is a 9 cm Moder, indicating good productivity.

### 5. Sword fern site series

The diversity of vegetation — especially herbaceous species which are quite abundant here — distinguishes this from the other site series. Sword fern is uniformly present although of minor significance in many sites. Stinging nettle, sweet-scented bedstraw, wall-lettuce (*Mycelis muralis*), and crinkle-awned fescue (*Festuca subuliflora*) are well-represented nitrophytic species indicative of nutrient-rich sites. Some grasses, such as Canada wildrye (*Elymus canadensis*), weak false-manna (*Torreyochloa pauciflora*), and Dewey's sedge (*Carex deweyana*), occur in localized microsites. Oregon-grape and salal occur sporadically, with salal rooting only in decaying stumps or logs.

Red alder is usually abundant, often forming pure stands. Douglas-fir is the preferred species to manage together with western redcedar and grand fir. On imperfectly drained sites where a water table or evidence of gleying is apparent, western redcedar and grand fir should replace Douglas-fir as the major species. Of the site types recognized in the area, the sword fern types are the most productive, yielding the greatest volume for the three species considered above. The percentage component of these species in a given stand should ideally be based on some historical evidence of suitability. Lacking this, the guidelines for the Vancouver Forest Region (Green *et al.* 1984) indicate a flexibility in allowing any one species to be used solely or as a component in a mixture.

Current operational practice usually favours the use of Douglas-fir with minor components of primarily western redcedar. The latter is often used along stream edges or in small depressions, although brush hazard and animal browsing may alter this decision. If the plantation is to be routinely brushed, Douglas-fir can be applied; otherwise, shade-tolerant western redcedar and grand fir could be used. However, it is likely that some brushing will still be required. In the absence of brush control, conifers will be outgrown by brush, particularly red alder, and, under a closed canopy, growth will be considerably reduced. Since western redcedar is the most palatable species and susceptible to browsing, grand fir may be more suitable unless protective measures can be employed.

#### 5a. Sword fern/gleyed site type

This site type occurs in shallow draws and depressions where soils are fine textured and imperfectly to poorly drained. The fluctuating water table produces gleyed soils with rust-coloured mottles. Mull and Mullmoder humus forms predominate. The edatope is 6/E and the potential productivity is good, but a high water table narrows the choice of tree species. On these sites, Douglas-fir should not be planted, but rather western redcedar or grand fir, which tolerate prolonged soil saturation. Alternatively, red alder can be managed for firewood production. The soils are susceptible to compaction, especially in the wetter months of the year, and there is a high potential brush hazard (Figure 13). However, these sites are robust in terms of tolerating burning and surface erosion.

FIGURE A1.8. Stand f1. An example of the Sw/g site type. This is a pure red alder stand growing in a depression with gleyed soils and a water table at 35 cm. Grasses, especially Canada wildrye and crinkle-awned fescue, dominate the understory.

## APPENDIX 2. Silvicultural regimes for working groups

**Working group - a1**
Associated stands: a1, a2, a3, a4, a5
Total area - 3.9 ha

| | |
|---|---|
| Management objectives: | Preservation and enhancement of wildlife and recreational values by creating and maintaining irregularly stocked uneven-aged stands; occasional production of Fd and Cw sawlogs |
| Silvicultural system: | Single-tree selection |
| Rotation age: | 10-year cutting cycle; guiding minimum dbh - 70 cm |
| Regeneration:<br>a) Site preparation<br>b) Planting | |
| Intermediate treatments:<br>a) release cuttings | 1. Thinning — in dense groups of all dbh classes to enhance the health and aesthetics of stands.<br>2. Sanitation and salvage cuttings — remove insect-attacked and diseased trees; leave enough snags and dying trees as source of food and habitat for insectivorous and cavity-nesting birds. |
| b) pruning | In areas with higher recreational use to enhance access and aesthetics. |
| c) site amelioration | Plant forage shrubs and trees; build recreation trails to good viewpoints. |
| Preparatory cut: | |
| Seed cut: | |

**Working group - b1**
Associated stands: b2, b3, b4, b5, b6, b8
Total area - 7.9 ha

| | |
|---|---|
| Management objectives: | Production of Fd sawlogs, while preserving recreational and wildlife values |
| Silvicultural system: | Shelterwood |
| Rotation age: | 120 years |
| Removal cut: | In one or two phases depending on regeneration (minimum 1500 well-distributed stems/ha); the final cut should be carried out when the regeneration is young and limber |
| Regeneration:<br>a) Site preparation:<br>b) Planting | Exposure of mineral soil simultaneously with the seed or preparatory cut |

| | |
|---|---|
| Intermediate treatments: | |
| a) release cuttings | 1. Cleaning — when 3-5 m tall (15-25 yr) cut to 1100 stems/ha; remove the smaller suppressed trees; accumulation of slash should be avoided.<br>2. First thinning — when 10-12 m tall (30-35 yr); leave best 800 stems/ha.<br>3. Second thinning — at 70 yr; leave the best 600 stems/ha but also some snags or dying trees for bird habitat. |
| b) pruning | 1. First — when 3-5 m tall; prune the best 500 trees to 1.5-2.5 m height.<br>2. Second — when 8-12 m tall; prune to 6-7 m. |
| Preparatory cut: | At 90 years; leave 500 stems/ha |
| Seed cut: | At 100 years; leave 220 of the largest, most vigorous and best formed trees |

**Working group - bII**
Associated stands: b1, b7
Total area - 0.8 ha

| | |
|---|---|
| Management objectives: | Production of Christmas trees |
| Silvicultural system: | Clearcut |
| Rotation age: | 8-10 years |
| Removal cut: | Clearcut |
| Regeneration: | |
| a) Site preparation: | Spot scarification by hand if necessary |
| b) Planting: | Plant Fd, spacing 2 m between rows, 1.5 within rows |
| Intermediate treatments: | |
| a) release cuttings | Weeding — first 3-4 years if necessary. |
| b) pruning | Shearing — start when the trees are 1 m high and continue until harvest. |
| c) site amelioration | Fertilization for greener foliage if necessary. |

**Working group - cI**
Associated stands: c1-c9
Total area 4.9 ha

| | |
|---|---|
| Management objectives: | Production of Fd sawlogs while preserving recreational and wildlife values |
| Silvicultural system: | Shelterwood |
| Rotation age: | 90 years |
| Removal cut: | In one phase; regeneration minimum of 1300 well-distributed stems/ha |
| Regeneration: | |
| a) Site preparation: | Exposure of mineral soil simultaneously with the seed cut |
| b) Planting: | |

| | |
|---|---|
| Intermediate treatments: | |
| a) release cuttings | 1. Cleaning — when 4-5 m tall; leave 1000 stems/ha (mostly Fd).<br>2. First thinning — when 10-12 m tall (30 yr); leave 850 stems/ha.<br>3. Second thinning — when 15 m tall (40 yr); leave 700 stems/ha.<br>4. Third thinning — 50 yr; leave 600 stems/ha.<br>5. Fourth thinning — at 60 yr; leave 500 stems/ha. |
| b) pruning | 1. First — when 4-5 m tall; prune the best 500 trees to 2-2.5 m height.<br>2. Second — when 8-10 m; prune to 4-5 m.<br>3. Third — when 12-15 m; prune to 6-8 m. |
| c) site amelioration | |
| Preparatory cut: | At 70 years; leave 400 stems/ha |
| Seed cut: | At 80 years; leave 200 stems/ha |

**Working group - dl**
Associated stands: d1, d2, d3, d4
Total area - 1.3 ha

| | |
|---|---|
| Management objectives: | Production of 50% Fd, 40% Cw sawlogs, and 10% Dr firewood; prevention of soil erosion; preservation of wildlife values; creating and maintaining uneven-aged stand structure |
| Silvicultural system: | Single-tree selection |
| Rotation age: | 10-year cutting cycle; guiding minimum dbh 90 cm |
| Removal cut: | Individual trees over the whole area when they reach over 90-cm dbh |
| Regeneration:<br>a) Site preparation:<br>b) Planting: | |
| Intermediate treatments: | |
| a) release cuttings | 1. Thinning — in dense younger groups; species composition should be maintained as 50% Fd, 40% Cw, and 10% Dr.<br>2. Sanitation cutting — insect-attacked and disease trees; leave some snags or dying trees for bird habitat. |
| b) pruning<br>c) site amelioration | |
| Preparatory cut: | |
| Seed cut: | |

**Working group - el**
Associated stands: e4, e5, e6, e7, e8
Total area - 2.8 ha

| | |
|---|---|
| Management objectives: | Production of Fd sawlogs; maintain recreational values |

| | |
|---|---|
| Silvicultural system: | Shelterwood |
| Rotation age: | 70 years |
| Removal cut: | In one phase; minimum of 1200 well-distributed stems/ha |
| Regeneration:<br>a) Site preparation:<br>b) Planting: | Exposure of mineral soil simultaneously with the seed cut |
| Intermediate treatments:<br>a) release cuttings<br><br><br><br>b) pruning | 1. Cleaning — when 4-5 m tall (10-15 yr); leave 900 stems/ha.<br>2. First thinning — when 10-12 m tall (20-25 yr); leave 700 stems/ha.<br>3. Second thinning — at 30 yr; leave 550 stems/ha.<br>4. Third thinning — at 40 yr; leave 420 stems/ha.<br>1. First — when 4-5 m tall; prune the best 450 trees to 2-2.5 m height.<br>2. Second — when 8-10 m tall; prune 4-5 m.<br>3. Third — when 12-15 m tall; prune to 6-8 m. |
| Preparatory cut: | At 50 years; leave 300 stems/ha |
| Seed cut: | At 60 years; leave 150 stems/ha |

**Working group - eII**
Associated stands: e2, e9, e11
Total area - 1.4 ha

| | |
|---|---|
| Management objectives: | Production of 50% Fd and 50% Cw sawlogs; maintain recreational values |
| Silvicultural system: | Shelterwood |
| Rotation age: | 80 years |
| Removal cut: | In one phase; regeneration — minimum of 1300 (650 Fd, 650 Cw) well-distributed stems/ha |
| Regeneration:<br>a) Site preparation:<br>b) Planting: | Exposure of mineral soil simultaneously with the seed cut |
| Intermediate treatments:<br>a) release cuttings<br><br><br><br><br>b) pruning<br><br><br>c) site amelioration | 1. Cleaning — when 4-5 m tall (10-15 yr); leave 1000 stems/ha.<br>2. First thinning — when 10-12 m tall (20-25 yr); leave 800 stems/ha.<br>3. Second thinning — at 30 yr; leave 650 stems/ha.<br>4. Third thinning — at 40 yr; leave 500 stems/ha.<br>5. Fourth thinning — at 50 yr; leave 400 stems/ha.<br>1. First — when 4-5 m tall; prune the best 500 trees to 2-2.5 m height.<br>2. Second — when 8-10 m tall; prune to 4-5 m.<br>3. Third — when 12-15 m tall; prune to 6-8 m. |
| Preparatory cut: | At 60 years; leave 300 stems/ha |

| | |
|---|---|
| Seed cut: | At 70 years; leave 100 stems/ha |

**Working group - eIII**
Associated stands: e1, e3, e10
Total area - 1.7 ha

| | |
|---|---|
| Management objectives: | Production of Dr firewood |
| Silvicultural system: | Clearcutting |
| Rotation age: | 15 years |
| Removal cut: | Clearcutting; guiding minimum dbh 12 cm |
| Regeneration:<br>a) Site preparation:<br>b) Planting: | <br><br>Dr at 1100 seedlings/ha |
| Intermediate treatments:<br>a) release cuttings<br>b) pruning<br>c) site amelioration | |
| Preparatory cut: | |
| Seed cut: | |

**Working group - fI**
Associated stands: f1, f2
Total area - 0.4 ha

| | |
|---|---|
| Management objectives: | Production of Cw sawlogs; maintain recreational and wildlife values |
| Silvicultural system: | Shelterwood |
| Rotation age: | 70 years |
| Removal cut: | In one phase; regeneration minimum of 1200 well-distributed stems/ha |
| Regeneration:<br>a) Site preparation:<br>b) Planting: | <br><br> |
| Intermediate treatments:<br>a) release cuttings | 1. Weeding — first 3-4 yr to assure free growth.<br>2. Cleaning — when 4-5 m tall; 1000 stems/ha.<br>3. First thinning — when 10-12 m tall (20-25 yr); leave 800 stems/ha.<br>4. Second thinning — at 30 yr; leave 660 stems/ha.<br>5. Third thinning — at 40 yr; leave 550 stems/ha.<br>6. Fourth thinning — at 50 yr; leave 460 stems/ha. |

| | |
|---|---|
| b) pruning | 1. First — when 4-5 m tall; prune the best 400 trees to 2-2.5 m height.<br>2. Second — when 8-10 m tall; prune to 4-5 m.<br>3. Third — when 12-15 m tall; prune to 6-8 m. |
| c) site amelioration | |
| Preparatory cut: | At 60 yr; leave 380 stems/ha |
| Seed cut: | At 65 yr; leave 150 stems/ha |

# APPENDIX 3. Stand description and planning tables

## STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | a | 1 |

**DESCRIPTION**

| Area ha | Age yrs | Crown closure % | Growth class: Actual | Growth class: Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha: Total | Number of stems/ha: >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 0.3 | 60 | 30 | L | L | | 13.5 | 20 | 340 | 90 | 12.7 | | 100 | 30 |
| | | | | | Fd 8 | 14.0 | 20 | 250 | 80 | 9.2 | 17 | 90 | 30 |
| | | | | | Cw 2 | 12.0 | 15 | 90 | 10 | 3.5 | | 10 | |
| | | | | | Hw + | | | | | | | | |

**PLANNING**

| Cutting: Type | Cutting: Area ha | Cutting: Trees/ha to leave | Planting: Tree spp | Planting: Area ha | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area ha | Site preparation: Methods | Site preparation: Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| NONE | | | | | | | | | | |

**NOTES:** Age 30-90 yr ; ht 6-22 m; dense younger groups in shallow depressions between rock outcrops; very good view from NW corner; many game trails

**NOTES:**

**NOTES:**

| | |
|---|---|
| 31 Regulation class | protection |
| 32 Protection subclass | wildlife |
| 33 Silviculture class | precom. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb: Fd-Ar/r |
| 36 Edatope | 0-1/C |
| 37 Working group | aI |
| 38 Non-productive land % | 50 |
| 39 Elevation (m) | 370 |
| 40 Aspect | NE |
| 41 Slope (%) | 30 |
| 42 Terrain | broken |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen | |
| 46 MAI (m³/ha/year) | 1.7 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

| Compartment | Subcompartment | Stand | Area ha | Age yrs | Crown closure % | Growth class: Actual | Growth class: Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha: Total | Number of stems/ha: >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | a | 2 | 1.7 | 100 | 40 | L | L | | 16.5 | 25 | 600 | 180 | 23.5 | | 200 | 340 |
| | | | | | | | | Fd 6 | 17.0 | 30 | 260 | 100 | 13.5 | 17 | 120 | 200 |
| | | | | | | | | Cw 2 | 16.0 | 20 | 180 | 40 | 5.6 | | 40 | 70 |
| | | | | | | | | Hw 2 | 16.0 | 20 | 160 | 40 | 4.4 | | 40 | 70 |

| Cutting: Type | Cutting: Area ha | Cutting: Trees/ha to leave | Planting: Tree spp | Planting: Area ha | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area ha | Site preparation: Methods | Site preparation: Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| NONE | | | | | | | | | | |

**NOTES:** Patches of younger trees; age 40-180 yr ; ht 8-25 m; few very big trees in areas between rock outcrops

**NOTES:**

**NOTES:**

| | |
|---|---|
| 31 Regulation class | protection |
| 32 Protection subclass | wildlife |
| 33 Silviculture class | precom. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb: Fd-Ar/r |
| 36 Edatope | 0-1/C |
| 37 Working group | aI |
| 38 Non-productive land % | 30 |
| 39 Elevation (m) | 360 |
| 40 Aspect | N,NE |
| 41 Slope (%) | 50 |
| 42 Terrain | broken |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen | |
| 46 MAI (m³/ha/year) | 2.0 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

| Compartment | Subcompartment | Stand | Area ha | Age yrs | Crown closure % | Growth class: Actual | Growth class: Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha: Total | Number of stems/ha: >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | a | 3 | 1.7 | 50 | 30 | L | L | | 11.5 | 15 | 450 | 40 | 9.8 | | 70 | 120 |
| | | | | | | | | Fd 7 | 12.0 | 20 | 300 | 25 | 6.5 | 16 | 50 | 90 |
| | | | | | | | | Cw 2 | 10.0 | 10 | 100 | 10 | 2.3 | | 10 | 20 |
| | | | | | | | | Hw 1 | 10.0 | 10 | 50 | 5 | 1.0 | | 10 | 10 |
| | | | | | | | | Ar + | | | | | | | | |

| Cutting: Type | Cutting: Area ha | Cutting: Trees/ha to leave | Planting: Tree spp | Planting: Area ha | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area ha | Site preparation: Methods | Site preparation: Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| NONE | | | | | | | | | | |

**NOTES:** Younger groups (20-30 yr ) of Fd & older patches (60-100 yr ) of Fd,Cw,Hw (Ar); few big trees in depressions between rock outcrops; ht varies from 3-20 m; dense salal in patches

**NOTES:**

**NOTES:**

| | |
|---|---|
| 31 Regulation class | protection |
| 32 Protection subclass | wildlife |
| 33 Silviculture class | precom. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb: Fd-Ar/r |
| 36 Edatope | 0-1/C |
| 37 Working group | aI |
| 38 Non-productive land % | 30 |
| 39 Elevation (m) | 320 |
| 40 Aspect | E,NE |
| 41 Slope (%) | 30 |
| 42 Terrain | broken |
| 43 Undergrowth | medium |
| 44 Debris | fine, light |
| 45 Natural regen | |
| 46 MAI (m³/ha/year) | 1.4 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

# APPENDIX 3. (Continued)

## STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | a | 4 |

**DESCRIPTION**

| Area ha | Age yrs | Crown closure % | Growth class: Actual | Growth class: Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha: total | Number of stems/ha: >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 0.1 | 20 | 50 | L | L | | 5.0 | 5 | 50 | | | | | |

**PLANNING**

| Cutting: Type | Cutting: Area ha | Cutting: Trees/ha to leave | Planting: Tree spp. | Planting: Area ha | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area ha | Site preparation: Methods | Site preparation: Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| NONE | | | | | | | | | | |

**NOTES:** Age varies from 5-30 yr ; ht from 3-8 m; trees 10-20° chlorotic ;about 800 trees/ha less than 7.5 cm dbh

| Tree species composition | |
|---|---|
| Fd | 10 |
| Hw | + |
| Cw | + |

**NOTES:**

**NOTES:**

| | | | | | |
|---|---|---|---|---|---|
| 31 | Regulation class | protection | 35 | Site type | CDFb: Fd-Ar/r |
| 32 | Protection subclass | wildlife | 36 | Edatope | 0-1/C |
| 33 | Silviculture class | juvenile immature | 37 | Working group | aI |
| 34 | Ownership status | Crown land | 38 | Non-productive land % | 40 |

| | | | | | |
|---|---|---|---|---|---|
| 39 | Elevation (m) | 360 | 43 | Undergrowth | light |
| 40 | Aspect | E | 44 | Debris | fine, light |
| 41 | Slope (%) | 30 | 45 | Natural regen. | |
| 42 | Terrain | broken | 46 | MAI (m³/ha/year) | |

| | | | |
|---|---|---|---|
| 47 | History record | | |
| 48 | Airphoto number | BCC [illegible]-030 | |
| 49 | Year of survey | 19[illegible] | |
| 50 | Year of update | | |

| Compartment | Subcompartment | Stand | Area ha | Age yrs | Crown closure % | Growth class: Actual | Growth class: Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha: total | Number of stems/ha: >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | a | 5 | 0.1 | 80 | 50 | L | L | | 16.0 | 25 | 460 | 180 | 19.4 | | 140 | 10 |

| Cutting: Type | Cutting: Area ha | Cutting: Trees/ha to leave | Planting: Tree spp. | Planting: Area ha | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area ha | Site preparation: Methods | Site preparation: Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| NONE | | | | | | | | | | |

**NOTES:** Age varies from 40-120 yr ; ht from 8-20 m

| Tree species composition | |
|---|---|
| Fd | 10 |
| Cw | + |
| Hw | + |

**NOTES:**

**NOTES:**

| | | | | | |
|---|---|---|---|---|---|
| 31 | Regulation class | protection | 35 | Site type | CDFb: Fd-Ar/r |
| 32 | Protection subclass | wildlife | 36 | Edatope | 0-1/C |
| 33 | Silviculture class | precom. immature | 37 | Working group | aI |
| 34 | Ownership status | Crown land | 38 | Non-productive land % | 30 |

| | | | | | |
|---|---|---|---|---|---|
| 39 | Elevation (m) | 400 | 43 | Undergrowth | light |
| 40 | Aspect | NE | 44 | Debris | fine, light |
| 41 | Slope (%) | 20 | 45 | Natural regen. | |
| 42 | Terrain | broken | 46 | MAI (m³/ha/ year) | 1.8 |

| | | |
|---|---|---|
| 47 | History record | |
| 48 | Airphoto number | BCC 249-030 |
| 49 | Year of survey | 1985 |
| 50 | Year of update | |

| Compartment | Subcompartment | Stand | Area ha | Age yrs | Crown closure % | Growth class: Actual | Growth class: Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha: total | Number of stems/ha: >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | b | 1 | 0.1 | 120 | 70 | P | P | | 28.0 | 50 | 240 | 205 | 39.6 | | 300 | 30 |

| Cutting: Type | Cutting: Area ha | Cutting: Trees/ha to leave | Planting: Tree spp. | Planting: Area ha | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area ha | Site preparation: Methods | Site preparation: Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| CL.C | 0.1 | | | 0.1 | 3330 | | | MAN | 0.1 | |

**NOTES:** Dense salal undergrowth (except under small patch of Cw)

| Tree species composition | | | | | |
|---|---|---|---|---|---|
| Fd | 9 | 29.0 | 50 | 180 | 180 | 34.0 | 28 | 270 | 30 |
| Cw | 1 | 21.0 | 35 | 60 | 25 | 5.6 | | 30 | |
| Hw | + | | | | | | | | |

**NOTES:** Cut 100% Fd and Cw

| Planting: Tree spp. | Planting: Area ha | Planting: Seedlings per ha |
|---|---|---|
| Fd | 0.1 | 3330 |

**NOTES:** Expected vol. - Fd 30m³; plant Fd 2 m between rows, 1.5 m within row; spot scarification by hand

| | | | | | |
|---|---|---|---|---|---|
| 31 | Regulation class | production | 35 | Site type | CDFb: Sa/ sh-sl |
| 32 | Protection subclass | | 36 | Edatope | 1-2/B |
| 33 | Silviculture class | mature | 37 | Working group | bII |
| 34 | Ownership status | Crown land | 38 | Non-productive land % | |

| | | | | | |
|---|---|---|---|---|---|
| 39 | Elevation (m) | 250 | 43 | Undergrowth | medium |
| 40 | Aspect | NE | 44 | Debris | fine, light |
| 41 | Slope (%) | 40 | 45 | Natural regen. | |
| 42 | Terrain | rolling | 46 | MAI (m³/ha/year) | 2.5 |

| | | |
|---|---|---|
| 47 | History record | |
| 48 | Airphoto number | BCC 249-030 |
| 49 | Year of survey | 1985 |
| 50 | Year of update | |

## APPENDIX 3. (Continued)

### STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | b | 2 |

**DESCRIPTION**

| Area (ha) | Age (yrs) | Crown closure (%) | Growth class: Actual | Growth class: Potential | Tree species composition | Height (m) | Dbh (cm) | Number of stems/ha: Total | Number of stems/ha: >22.5 cm | Basal area (m²/ha) | Site index | Volume (m³/ha) | Total volume (m³) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 0.6 | 40 | 70 | P | P | | 14.0 | 15 | 1100 | 100 | 20.2 | | 120 | 70 |

**PLANNING**

| Cutting: Type | Cutting: Area (ha) | Cutting: Trees/ha to leave | Planting: Tree spp | Planting: Area (ha) | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area (ha) | Site preparation: Methods | Site preparation: Area (ha) | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| T1&P | 0.6 | 800 | | | | | | | | |

**NOTES:** Very dense patches; several small openings between the road and the rock; few older decayed Cw

| Tree species composition | |
|---|---|
| Fd | 10 |
| Cw | + |

| Height (m) | Dbh (cm) | Total | >22.5 cm | Basal area (m²/ha) | Site index | Volume (m³/ha) | Total volume (m³) |
|---|---|---|---|---|---|---|---|
| 14.0 | 15 | 1100 | 100 | 20.2 | 22 | 120 | 70 |

**NOTES:** Low thinning in dense clumps; cut 10%; prune the 500 best trees to 6-7 m height

**NOTES:** Expected vol. - Fd 10 m³

| | | | |
|---|---|---|---|
| 31 | Regulation class | production | |
| 32 | Protection subclass | | |
| 33 | Silviculture class | precom. immature | |
| 34 | Ownership status | Crown land | |
| 35 | Site type | CDFb: Sa/sh | |
| 36 | Edatope | 1/B | |
| 37 | Working group | bI | |
| 38 | Non productive land % | 5 | |
| 39 | Elevation (m) | 260 | |
| 40 | Aspect | NE | |
| 41 | Slope (%) | 25 | |
| 42 | Terrain | broken | |
| 43 | Undergrowth | medium | |
| 44 | Debris | fine. light | |
| 45 | Natural regen | | |
| 46 | MAI (m³/ha/year) | 3.0 | |
| 47 | History record | | |
| 48 | Airphoto number | BCC 249-030 | |
| 49 | Year of survey | 1985 | |
| 50 | Year of update | | |

| Compartment | Subcompartment | Stand | Area (ha) | Age (yrs) | Crown closure (%) | Growth class: Actual | Growth class: Potential | Tree species composition | Height (m) | Dbh (cm) | Number of stems/ha: Total | Number of stems/ha: >22.5 cm | Basal area (m²/ha) | Site index | Volume (m³/ha) | Total volume (m³) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | b | 3 | 4.2 | 120 | 60 | P | P | | 24.0 | 30 | 770 | 450 | 53.9 | | 380 | 1600 |

| Cutting: Type | Cutting: Area (ha) | Cutting: Trees/ha to leave | Planting: Tree spp | Planting: Area (ha) | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area (ha) | Site preparation: Methods | Site preparation: Area (ha) | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| PREP | 4.2 | 450 | | | | | | MAN | 0.5 | |

**NOTES:** Very heterogeneous; yonger denser groups of Cw,Hw; lots of openings & exposed rocks; heavy salal; few vets; age varies from 50-160 yr ; minor inclusion of Sa/sh site type; some root rot

| Tree species composition | |
|---|---|
| Fd | 5 |
| Cw | 3 |
| Hw | 2 |
| Dr | + |

| Height (m) | Dbh (cm) | Total | >22.5 cm | Basal area (m²/ha) | Site index | Volume (m³/ha) | Total volume (m³) |
|---|---|---|---|---|---|---|---|
| 26.0 | 35 | 320 | 250 | 28.0 | 25 | 200 | 840 |
| 21.0 | 25 | 280 | 120 | 14.3 | | 110 | 460 |
| 23.0 | 30 | 170 | 80 | 11.6 | | 70 | 300 |

**NOTES:** Cut Hw-100% Cw-50%, Fd-10%

Postpone

**NOTES:** Postpone until next planning period.
Expose mineral soil in the openings created by cutting Hw & Cw groups; expected vol. Hw - 300 m³; Cw 230 m³; Fd 80 m³

| | | | |
|---|---|---|---|
| 31 | Regulation class | production | |
| 32 | Protection subclass | | |
| 33 | Silviculture class | mature | |
| 34 | Ownership status | Crown land | |
| 35 | Site type | CDFb: Sa/lsk | |
| 36 | Edatope | 2-3/B | |
| 37 | Working group | bI | |
| 38 | Non productive land % | 5 | |
| 39 | Elevation (m) | 300 | |
| 40 | Aspect | NE | |
| 41 | Slope (%) | 20 | |
| 42 | Terrain | broken | |
| 43 | Undergrowth | medium | |
| 44 | Debris | coarse, light | |
| 45 | Natural regen | | |
| 46 | MAI (m³/ha/ year) | 3.2 | |
| 47 | History record | | |
| 48 | Airphoto number | BCC 249-030 | |
| 49 | Year of survey | 1985 | |
| 50 | Year of update | | |

| Compartment | Subcompartment | Stand | Area (ha) | Age (yrs) | Crown closure (%) | Growth class: Actual | Growth class: Potential | Tree species composition | Height (m) | Dbh (cm) | Number of stems/ha: Total | Number of stems/ha: >22.5 cm | Basal area (m²/ha) | Site index | Volume (m³/ha) | Total volume (m³) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | b | 4 | 0.5 | 40 | 70 | P | P | | 14.0 | 15 | 1000 | 150 | 22.2 | | 150 | 80 |

| Cutting: Type | Cutting: Area (ha) | Cutting: Trees/ha to leave | Planting: Tree spp | Planting: Area (ha) | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area (ha) | Site preparation: Methods | Site preparation: Area (ha) | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| T1&P | 0.5 | 800 | | | | | | | | |

**NOTES:** Couple of small openings around exposed rocks; dense salal in patches; few Cw vets

| Tree species composition | |
|---|---|
| Fd | 10 |
| Cw | + |
| Hw | + |

| Height (m) | Dbh (cm) | Total | >22.5 cm | Basal area (m²/ha) | Site index | Volume (m³/ha) | Total volume (m³) |
|---|---|---|---|---|---|---|---|
| 14.0 | 15 | 1000 | 150 | 22.2 | 22 | 150 | 80 |

**NOTES:** As in stand b2

**NOTES:** Expected vol.- Fd 10 m³

| | | | |
|---|---|---|---|
| 31 | Regulation class | production | |
| 32 | Protection subclass | | |
| 33 | Silviculture class | precom. immature | |
| 34 | Ownership status | Crown land | |
| 35 | Site type | CDFb: Sa/sh | |
| 36 | Edatope | 1/B | |
| 37 | Working group | bI | |
| 38 | Non productive land % | 5 | |
| 39 | Elevation (m) | 310 | |
| 40 | Aspect | E | |
| 41 | Slope (%) | 25 | |
| 42 | Terrain | broken | |
| 43 | Undergrowth | medium | |
| 44 | Debris | fine, light | |
| 45 | Natural regen | | |
| 46 | MAI (m³/ha/year) | 3.8 | |
| 47 | History record | | |
| 48 | Airphoto number | BCC 249-030 | |
| 49 | Year of survey | 1985 | |
| 50 | Year of update | | |

# APPENDIX 3. (Continued)

## STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | b | 5 |

**DESCRIPTION**

| Area ha | Age yrs | Crown closure % | Growth class Actual | Growth class Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1.9 | 150 | 60 | P | P | | 25.5 | 50 | 450 | 290 | 48.3 | | 340 | 650 |
| | | | | | Fd 9 | 26.0 | 50 | 220 | 210 | 41.5 | 25 | 300 | 570 |
| | | | | | Cw 1 | 20.0 | 25 | 120 | 70 | 5.1 | | 30 | 60 |
| | | | | | Hw + | | | 110 | 10 | 1.7 | | 10 | 20 |

**PLANNING**

| Cutting Type | Cutting Area ha | Cutting Trees/ha to leave | Planting Tree spp. | Planting Area ha | Planting Seedlings per ha | Fertilization Type | Fertilization Area ha | Site preparation Methods | Site preparation Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| PREP | 1.9 | 400 | | | | | | MAN | 0.5 | |

**NOTES:** Age varies from 70-180 yr ; lots of small openings; heavy salal throughout; patches of Hw and Fd regen; small dense patches of Cw(Hw)

**NOTES:** Cut 10% Fd, 100% Cw and 100% Hw.

Postpone

**NOTES:** Postpone until next planning period

Expose mineral soil by up-rooting the salal in strips 1 m wide 3 m apart; expected vol. Fd 60 m³, Cw 60 m³, Hw 20 m³

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | mature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb: Sa/sh-sl |
| 36 Edatope | 1-2/B |
| 37 Working group | bI |
| 38 Non-productive land % | 5 |
| 39 Elevation (m) | 360 |
| 40 Aspect | E |
| 41 Slope (%) | 50 |
| 42 Terrain | broken |
| 43 Undergrowth | medium |
| 44 Debris | fine, light |
| 45 Natural regen. | |
| 46 MAI (m³/ha/year) | 2.3 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | 6 | 0.4 | 40 | 50 | P | P | | | 14.0 | 15 | 680 | 120 | 14.4 | | 120 | 50 |
| | | | | | | | | Fd | 10 | 14.0 | 15 | 660 | 100 | 10.8 | 22 | 90 | 40 |
| | | | | | | | | Cw | + | | | | | | | | |
| | | | | | | | | Hw | + | | | | | | | | |
| | | | | | | | | Vets | | | | | | | | | |
| | | | | | | | | Fd | | 27.0 | 50 | 20 | 20 | 3.6 | | 30 | 10 |

| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| NONE | | | | | | | | | | | |

**NOTES:** Numerous openings; several denser patches; scattered vets

**NOTES:**

**NOTES:**

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | precom. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb: Sa/sh |
| 36 Edatope | 1/B |
| 37 Working group | bI |
| 38 Non-productive land % | 10 |
| 39 Elevation (m) | 390 |
| 40 Aspect | S |
| 41 Slope (%) | 30 |
| 42 Terrain | broken |
| 43 Undergrowth | light |
| 44 Debris | fine. light |
| 45 Natural regen. | |
| 46 MAI (m³/ha/ year) | 3.0 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | b | 7 | 0.7 | 130 | 70 | P | P | | | 24.5 | 35 | 460 | 310 | 47.6 | | 370 | 260 |
| | | | | | | | | Hw | 4 | 25.0 | 30 | 240 | 130 | 17.2 | 23 | 150 | 100 |
| | | | | | | | | Cw | 3 | 23.0 | 40 | 130 | 100 | 15.7 | | 110 | 80 |
| | | | | | | | | Fd | 3 | 26.0 | 45 | 90 | 80 | 14.7 | | 110 | 80 |

| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| CL.C | 0.7 | | | 0.7 | 3330 | | | | MAN | 0.7 | |

**NOTES:** Age varies from 80-170 yr; clumps of pure Fd intermixed with groups of Hw - Cw; Hw is not healthy (mistletoe, decay); heavy salal cover

**NOTES:** Cut 100% Hw, Cw and Fd

Fd 0.7 3330

**NOTES:** Expected vol. - Hw 100 m³, Cw 80 m³, Fd 80 m³, plant Fd at 2x1.5 m spacing; spot scarification by hand

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | mature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb: Sa/sh |
| 36 Edatope | 1/B |
| 37 Working group | bII |
| 38 Non productive land % | |
| 39 Elevation (m) | 380 |
| 40 Aspect | NE |
| 41 Slope (%) | 30 |
| 42 Terrain | broken |
| 43 Undergrowth | medium |
| 44 Debris | fine. light |
| 45 Natural regen. | |
| 46 MAI (m³/ha/year) | 2.8 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

## APPENDIX 3. (Continued)

### STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | b | 8 |

**DESCRIPTION**

| Area ha | Age yrs | Crown closure % | Growth class Actual | Growth class Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 0.3 | 40 | 90 | P | P | | 18.0 | 15 | 1350 | 200 | 30.2 | | 220 | 70 |
| | | | | | Fd 10<br>Hw +<br>Cw +<br>Pw + | 18.0 | 15 | 1350 | 200 | 30.2 | 32 | 220 | 70 |
| 0.7 | 50 | 70 | P | M | | 19.5 | 20 | 1200 | 390 | 29.5 | | 250/20 | 170/20 |
| | | | | | Fd 7<br>Cw 2<br>Dr 1<br>Hw +<br>Vets<br>Cw | 21.0<br>16.0<br>14.0<br><br><br>32.0 | 25<br>20<br>10<br><br><br>60 | 800<br>220<br>170<br><br><br>10 | 320<br>40<br>20<br><br><br>10 | 21.3<br>6.2<br>2.0 | 28 | 180<br>50<br>20<br><br><br>20 | 130<br>30<br>10<br><br><br>20 |
| 0.7 | 50 | 80 | M | M | | 22.5 | 30 | 870 | 290 | 37.1 | | 310/20 | 210/20 |
| | | | | | Fd 7<br>Cw 2<br>Dr 1<br>Hw +<br>Vets<br>Cw<br>Fd | 24.0<br>18.0<br>22.0<br><br><br><br> | 30<br>25<br>25<br><br><br><br> | 580<br>190<br>50<br>40<br><br>5<br>5 | 210<br>40<br>20<br>10<br><br>5<br>5 | 24.3<br>6.8<br>2.9<br>1.1<br><br>1.0<br>1.0 | 32 | 200<br>70<br>30<br>10<br><br>10<br>10 | 140<br>50<br>20<br><br><br>10<br>10 |

**PLANNING**

| Cutting Type | Cutting Area ha | Cutting Trees/ha to leave | Planting Tree spp | Planting Area ha | Planting Seedlings per ha | Fertilization Type | Fertilization Area ha | Site preparation Methods | Site preparation Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| T1&P | 0.3 | 800 | | | | | | | | |
| T1&P | 0.7 | 600 | | | | | | | | |
| T1&P | 0.7 | 600 | | | | | | | | |

**NOTES:** Some very dense clumps; 20% inclusion of Sa/sh site type; minor root rot

**NOTES:** Cut 20%; prune the best 500 trees to 7-8 m

**NOTES:** Expected vol. - Fd 10 m³

**NOTES:** Variable (clumpy) stocking; several openings around small rock outcrops; one pure Dr clump; few Cw vets

**NOTES:** Cut 100% Cw vets, 100% Dr, 20% Fd & Cw; prune 500 best trees to 6-8 m

**NOTES:** Expected vol. - Dr 10 m³; Fd 20 m³; Cw 10/20 m³

**NOTES:** Cw mostly in the S portion; several openings; 10% inclusion of Sa/lsk site type; few Cw & Fd vets; Dr in small clumps; minor root rot

**NOTES:** Cut all vets; 10% Fd, Cw, Dr; prune the 500 best trees to 6-8 m

**NOTES:** Expected vol. - Fd 10/10 m³ Cw 10/10 m³

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | Regulation class | production | 35 | Site type | CDFb:Sa/lsk | 39 | Elevation (m) | 400 | 43 | Undergrowth | light | 47 | History record | | | | | | | | | | | | | | | | |
| 32 | Protection subclass | | 36 | Edatope | 2-3/B | 40 | Aspect | NE | 44 | Debris | fine, light | 48 | Airphoto number | BCC 249-030 | | | | | | | | | | | | | | | |
| 33 | Silviculture class | com. immature | 37 | Working group | bI | 41 | Slope (%) | 10 | 45 | Natural regen. | | 49 | Year of survey | 1985 | | | | | | | | | | | | | | | |
| 34 | Ownership status | Crown land | 38 | Non productive land % | | 42 | Terrain | rolling | 46 | MAI (m³/ha/year) | 5.5 | 50 | Year of update | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | Regulation class | production | 35 | Site type | CDFb:Sa-Dr/sl-lsk | 39 | Elevation (m) | 360 | 43 | Undergrowth | light | 47 | History record | | | | | | | | | | | | | | | | |
| 32 | Protection subclass | | 36 | Edatope | 3/C | 40 | Aspect | NE | 44 | Debris | fine, light | 48 | Airphoto number | BCC 249-030 | | | | | | | | | | | | | | | |
| 33 | Silviculture class | com. immature | 37 | Working group | cI | 41 | Slope (%) | 50 | 45 | Natural regen. | | 49 | Year of survey | 1985 | | | | | | | | | | | | | | | |
| 34 | Ownership status | Crown land | 38 | Non productive land % | 10 | 42 | Terrain | broken | 46 | MAI (m³/ha/year) | 5.4 | 50 | Year of update | | | | | | | | | | | | | | | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | Regulation class | production | 35 | Site type | CDFb:Sa-Dr/sl-lsk | 39 | Elevation (m) | 320 | 43 | Undergrowth | light | 47 | History record | | | | | | | | | | | | | | | | |
| 32 | Protection subclass | | 36 | Edatope | 3/C | 40 | Aspect | NE | 44 | Debris | fine, light | 48 | Airphoto number | BCC 249-030 | | | | | | | | | | | | | | | |
| 33 | Silviculture class | com. immature | 37 | Working group | cI | 41 | Slope (%) | 40 | 45 | Natural regen. | | 49 | Year of survey | 1985 | | | | | | | | | | | | | | | |
| 34 | Ownership status | Crown land | 38 | Non productive land % | | 42 | Terrain | broken | 46 | MAI (m³/ha/year) | 6.6 | 50 | Year of update | | | | | | | | | | | | | | | | |

## APPENDIX 3. (Continued)

### STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | c | 3 |
| | c | 4 |
| | c | 5 |

**DESCRIPTION**

| Area (ha) | Age (yrs) | Crown closure (%) | Growth class: Actual | Growth class: Potential | Tree species composition | Height (m) | Dbh (cm) | Number of stems/ha: Total | Number of stems/ha: >22.5 cm | Basal area (m²/ha) | Site index | Volume (m³/ha) | Total volume (m³) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 0.4 | 80 | 70 | M | M | | 29.0 | 40 | 540 | 380 | 56.2 | | 490 | 200 |
| | | | | | Fd 5 | 30.0 | 45 | 200 | 180 | 29.7 | 32 | 250 | 100 |
| | | | | | Cw 3 | 28.0 | 30 | 190 | 120 | 15.6 | | 140 | 60 |
| | | | | | Hw 2 | 27.0 | 30 | 150 | 80 | 10.9 | | 100 | 40 |
| 1.3 | 50 | 70 | M | M | | 24.0 | 25 | 820 | 280 | 33.2 | | 310 | 400 |
| | | | | | Fd 7 | 26.0 | 30 | 550 | 180 | 24.2 | 35 | 210 | 270 |
| | | | | | Dr 2 | 20.0 | 20 | 190 | 70 | 6.8 | | 70 | 90 |
| | | | | | Cw 1 | 19.0 | 20 | 80 | 30 | 2.2 | | 30 | 40 |
| | | | | | Hw + | | | | | | | | |
| 0.4 | 90 | 80 | M | M | | 28.0 | 35 | 820 | 490 | 58.7 | | 580 | 230 |
| | | | | | Cw 7 | 28.0 | 30 | 690 | 390 | 42.4 | 29 | 400 | 160 |
| | | | | | Fd 1 | 30.0 | 40 | 50 | 40 | 6.3 | | 80 | 30 |
| | | | | | Hw 1 | 26.0 | 40 | 40 | 30 | 4.8 | | 50 | 20 |
| | | | | | Dr 1 | 30.0 | 40 | 40 | 30 | 5.2 | | 50 | 20 |

**PLANNING**

| Cutting: Type | Cutting: Area (ha) | Cutting: Trees/ha to leave | Planting: Tree spp | Planting: Area (ha) | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area (ha) | Site preparation: Methods | Site preparation: Area (ha) | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| PREP | 0.4 | 350 | | | | | | | | |
| T1&P | 1.3 | 600 | | | | | | | | |
| SEED | 0.4 | 200 | | | | | | MAN | 0.4 | |

**NOTES:** Some large Fd below the road

**NOTES:** Cut 100% Hw, 10% Fd and Cw

**NOTES:** Expected vol. - Hw 40 m³, Fd 10 m, Cw 10 m

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | com. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb:Sa-Or/s1-1sk |
| 36 Edatope | 3/C |
| 37 Working group | cI |
| 38 Non productive land % | |
| 39 Elevation (m) | 320 |
| 40 Aspect | E |
| 41 Slope (%) | 40 |
| 42 Terrain | broken |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen | |
| 46 MAI (m³/ha/year) | 6.1 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

**NOTES:** Age varies from 40-70 yr.; some Dr patches along the road; 10% inclusions of Sw/1 site type

**NOTES:** Cut 70% of Dr & 10% of Fd & Cw; prune the 500 best trees to 6-8 m

**NOTES:** Expected vol. -Dr 60 m³; Fd 30 m³

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | com. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb:Sa-Or/1sk |
| 36 Edatope | 3-4/C |
| 37 Working group | cI |
| 38 Non productive land % | |
| 39 Elevation (m) | 320 |
| 40 Aspect | E |
| 41 Slope (%) | 25 |
| 42 Terrain | broken |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen | |
| 46 MAI (m³/ha/ year) | 6.2 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

**NOTES:** Dr along the perimeter; some younger dense Cw clumps; minor root rot; some Cw are rotten

**NOTES:** Cut 100% Hw, Dr; 70% Cw

Postpone

**NOTES:** Postpone for the next planning period

Expected vol. - Dr 20 m³, Cw - 100 m³, Hw - 20 m³; expose mineral soil in spots to promote Fd regeneration

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | com. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb:Sa-Or/1sk |
| 36 Edatope | 3-4/C |
| 37 Working group | cI |
| 38 Non productive land % | |
| 39 Elevation (m) | 330 |
| 40 Aspect | N |
| 41 Slope (%) | 15 |
| 42 Terrain | gullied |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen | |
| 46 MAI (m³/ha/year) | 6.4 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

## APPENDIX 3. (Continued)

### STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | c | 6 |
| | c | 7 |
| | c | 8 |

**DESCRIPTION**

| Area (ha) | Age (yrs) | Crown closure (%) | Growth class: Actual | Growth class: Potential | Tree species composition | Height (m) | Dbh (cm) | Number of stems/ha: Total | Number of stems/ha: >22.5 cm | Basal area (m²/ha) | Site index | Volume (m³/ha) | Total volume (m³) |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1.2 | 40 | 90 | M | M | | 22.0 | 20 | 1915 | 175 | 34.9 | | 230<br>45 | 280<br>50 |
| | | | | | Fd 10 | 22.0 | 20 | 1900 | 160 | 30.3 | 35 | 230 | 280 |
| | | | | | Dr + | | | | | | | | |
| | | | | | Hw + | | | | | | | | |
| | | | | | Cw + | | | | | | | | |
| | | | | | Vets | | | | | | | | |
| | | | | | Cw | 30.0 | 60 | 10 | 10 | 3.1 | | 30 | 30 |
| | | | | | Fd | 35.0 | 60 | 5 | 5 | 1.5 | | 15 | 20 |
| 0.5 | 60 | 80 | M | M | | 25.0 | 25 | 700 | 360 | 31.5 | | 280 | 140 |
| | | | | | Hw 4 | 27.0 | 25 | 310 | 200 | 13.9 | 35 | 120 | 60 |
| | | | | | Cw 4 | 23.0 | 25 | 230 | 130 | 12.6 | | 110 | 50 |
| | | | | | Fd 2 | 20.0 | 20 | 160 | 30 | 5.0 | | 50 | 30 |
| | | | | | Dr + | | | | | | | | |
| 0.4 | 50 | 80 | M | M | | 24.0 | 25 | 810 | 310 | 38.4 | | 290 | 120 |
| | | | | | FD 10 | 24.0 | 25 | 690 | 300 | 36.6 | 32 | 280 | 120 |
| | | | | | Hw + | | | 120 | 10 | 1.8 | | 10 | |
| | | | | | Cw + | | | | | | | | |
| | | | | | Dr + | | | | | | | | |

**PLANNING**

| Cutting: Type | Cutting: Area (ha) | Cutting: Trees/ha to leave | Planting: Tree spp | Planting: Area (ha) | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area (ha) | Site preparation: Methods | Site preparation: Area (ha) | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| Tl&P | 1.2 | 700 | | | | | | | | |
| Tl | 0.5 | 500 | | | | | | | | |
| Tl&P | 0.4 | 600 | | | | | | | | |

**NOTES:** Few Cw and Fd vets; Dr along creek and trail; very dense clumps of smaller trees; 10% inclusion of Sa/sh site type

**NOTES:** Cut all vets & 25% Fd; prune the 500 best trees to 6-8 m

**NOTES:** Expected vol. -Fd $\frac{70}{20}$ m³ Cw $\frac{-}{30}$ m³

**NOTES:** Age varies from 30-80 yr; small dense clumps of Fd & Cw; Dr along the trail; minor root rot

**NOTES:** Cut 60% Hw, 10% Cw

**NOTES:** Expected vol.- Hw 30 m³

**NOTES:** Some dense younger clumps; few vets

**NOTES:** Cut 10% Fd

**NOTES:** Expected vol. - Fd 10 m³

| | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 31 | Regulation class | production | 35 | Site type | CDFb:Sa-Or/1sk | 39 | Elevation (m) | 300 | 43 | Undergrowth | light | 47 | History record | | | | | | | | | | |
| 32 | Protection subclass | | 36 | Edatope | 3-4/C | 40 | Aspect | SE | 44 | Debris | fine, light | 48 | Airphoto number | BCC 249-030 | | | | | | | | | |
| 33 | Silviculture class | com. immature | 37 | Working group | cI | 41 | Slope (%) | 30 | 45 | Natural regen | | 49 | Year of survey | 1985 | | | | | | | | | |
| 34 | Ownership status | Crown land | 38 | Non-productive land % | | 42 | Terrain | rolling | 46 | MAI (m³/ha/year) | 6.9 | 50 | Year of update | | | | | | | | | | |
| 31 | Regulation class | production | 35 | Site type | CDFb: Sa-Or/sl-1sk | 39 | Elevation (m) | 370 | 43 | Undergrowth | light | 47 | History record | | | | | | | | | | |
| 32 | Protection subclass | | 36 | Edatope | 3/C | 40 | Aspect | SE | 44 | Debris | fine, light | 48 | Airphoto number | BCC 249-030 | | | | | | | | | |
| 33 | Silviculture class | com. immature | 37 | Working group | cI | 41 | Slope (%) | 40 | 45 | Natural regen | | 49 | Year of survey | 1985 | | | | | | | | | |
| 34 | Ownership status | Crown land | 38 | Non-productive land % | | 42 | Terrain | rolling | 46 | MAI (m³/ha/ year) | 4.7 | 50 | Year of update | | | | | | | | | | |
| 31 | Regulation class | production | 35 | Site type | CDFb:Sa-Or/1sk | 39 | Elevation (m) | 400 | 43 | Undergrowth | light | 47 | History record | | | | | | | | | | |
| 32 | Protection subclass | | 36 | Edatope | 3-4/C | 40 | Aspect | W | 44 | Debris | fine, light | 48 | Airphoto number | BCC 249-030 | | | | | | | | | |
| 33 | Silviculture class | com. immature | 37 | Working group | cI | 41 | Slope (%) | 25 | 45 | Natural regen | | 49 | Year of survey | 1985 | | | | | | | | | |
| 34 | Ownership status | Crown land | 38 | Non-productive land % | | 42 | Terrain | rolling | 46 | MAI (m³/ha/year) | 5.8 | 50 | Year of update | | | | | | | | | | |

# APPENDIX 3. (Continued)

## STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | c | 9 |

**DESCRIPTION**

| Area ha | Age yrs | Crown closure % | Growth class Actual | Growth class Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area $m^2$/ha | Site index | Volume $m^3$/ha | Total volume $m^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 0.3 | 130 | 80 | M | M | | 37.5 | 55 | 300 | 280 | 77.1 | | 860 | 260 |
| | | | | | Cw 5 | 37.0 | 55 | 160 | 140 | 40.3 | 36 | 440 | 130 |
| | | | | | Hw 3 | 37.0 | 50 | 60 | 60 | 16.9 | | 210 | 60 |
| | | | | | Fd 2 | 39.0 | 65 | 50 | 50 | 15.9 | | 180 | 60 |
| | | | | | Dr + | | | 30 | 30 | 4.0 | | 30 | 10 |

**PLANNING**

| Cutting Type | Cutting Area ha | Cutting Trees/ha to leave | Planting Tree spp | Planting Area ha | Planting Seedlings per ha | Fertilization Type | Fertilization Area ha | Site preparation Methods | Site preparation Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| SEED | 0.3 | 200 | | | | | | MAN | 0.3 | |

NOTES: Some decay in Cw and Hw; few rock outcrops

NOTES: Cut 100% Hw, 10% Cw

NOTES: Expected vol. - Hw 60 $m^3$, Cw 10 $m^3$; expose mineral soil in spots

| | | | | | |
|---|---|---|---|---|---|
| 31 | Regulation class | production | 35 | Site type | CDFb:Sa-Or/lsk |
| 32 | Protection subclass | | 36 | Edatope | 3-4/C |
| 33 | Silviculture class | mature | 37 | Working group | cI |
| 34 | Ownership status | Crown land | 38 | Non-productive land % | |

| | | | | | |
|---|---|---|---|---|---|
| 39 | Elevation (m) | 400 | 43 | Undergrowth | light |
| 40 | Aspect | N | 44 | Debris | fine, light |
| 41 | Slope (%) | 30 | 45 | Natural regen | |
| 42 | Terrain | broken | 46 | MAI ($m^3$/ha/year) | 6.6 |

| | | | | | |
|---|---|---|---|---|---|
| 47 | History record | | | | |
| 48 | Airphoto number | BCC 249-030 | | | |
| 49 | Year of survey | 1985 | | | |
| 50 | Year of update | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | d | 1 | 0.2 | 80 | 70 | M | M | | | 32.5 | 35 | 380 | 300 | 40.6 | | 440 | 90 |
| | | | | | | | | Fd | 7 | 34.0 | 40 | 210 | 210 | 28.3 | 36 | 310 | 60 |
| | | | | | | | | Cw | 2 | 28.0 | 30 | 110 | 50 | 7.6 | | 80 | 20 |
| | | | | | | | | Hw | 1 | 30.0 | 30 | 60 | 40 | 4.7 | | 50 | 10 |
| | | | | | | | | Dr | + | | | | | | | | |

| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SAN | 0.2 | 360 | | | | | | | | | |

NOTES: Few Dr along the creek

NOTES: Cut unhealthy trees

NOTES:

| | | | | | |
|---|---|---|---|---|---|
| 31 | Regulation class | production | 35 | Site type | CDFb:Sw-Or/ssl-lsk |
| 32 | Protection subclass | | 36 | Edatope | 3/D |
| 33 | Silviculture class | com. immature | 37 | Working group | dI |
| 34 | Ownership status | Crown land | 38 | Non-productive land % | |

| | | | | | |
|---|---|---|---|---|---|
| 39 | Elevation (m) | 260 | 43 | Undergrowth | light |
| 40 | Aspect | NE | 44 | Debris | fine, light |
| 41 | Slope (%) | 80 | 45 | Natural regen | |
| 42 | Terrain | rolling | 46 | MAI ($m^3$/ha/year) | 5.5 |

| | | | | | |
|---|---|---|---|---|---|
| 47 | History record | | | | |
| 48 | Airphoto number | BCC 249-030 | | | |
| 49 | Year of survey | 1985 | | | |
| 50 | Year of update | | | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | d | 2 | 0.4 | 90 | 80 | M | M | | | 30.5 | 50 | 465 | 370 | 80.7 | | 800 | 320 |
| | | | | | | | | Cw | 7 | 31.0 | 55 | 235 | 210 | 55.0 | 32 | 560 | 220 |
| | | | | | | | | Fd | 3 | 30.0 | 45 | 120 | 100 | 20.4 | | 200 | 80 |
| | | | | | | | | Hw | + | | | 90 | 40 | 3.8 | | 30 | 10 |
| | | | | | | | | Dr | + | | | 20 | 20 | 1.5 | | 10 | 10 |

| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|
| SAN | 0.4 | 430 | | | | | | | | | |

NOTES: Hw mostly rotten; some younger clumps

NOTES: Cut unhealthy trees

NOTES: Expected vol. - Cw 20 $m^3$

| | | | | | |
|---|---|---|---|---|---|
| 31 | Regulation class | production | 35 | Site type | CDFb:Sw-Or/ssl-lsk |
| 32 | Protection subclass | | 36 | Edatope | 3/D |
| 33 | Silviculture class | com. immature | 37 | Working group | dI |
| 34 | Ownership status | Crown land | 38 | Non-productive land % | |

| | | | | | |
|---|---|---|---|---|---|
| 39 | Elevation (m) | 260 | 43 | Undergrowth | light |
| 40 | Aspect | NE | 44 | Debris | fine, light |
| 41 | Slope (%) | 70 | 45 | Natural regen | |
| 42 | Terrain | broken | 46 | MAI ($m^3$/ha/year) | 8.9 |

| | | |
|---|---|---|
| 47 | History record | |
| 48 | Airphoto number | BCC 249-030 |
| 49 | Year of survey | 1985 |
| 50 | Year of update | |

## APPENDIX 3. (Continued)

### STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION** | **DESCRIPTION** | **PLANNING**

| Compartment | Subcompartment | Stand | Area ha | Age yrs | Crown closure % | Growth class Actual | Growth class Potential | Tree species composition | | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area $m^2$/ha | Site index | Volume $m^3$/ha | Total volume $m^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| | d | 3 | 0.2 | 45 | 70 | M | M | | | 22.0 | 30 | 380 | 280 | 25.2 | | 200 | 40 |
| | | | | | | | | Dr | 10 | 22.0 | 30 | 380 | 280 | 25.2 | 25 | 200 | 40 |
| | | | | | | | | Hw | + | | | | | | | | |
| | | | | | | | | Cw | + | | | | | | | | |
| | | | | | | | | Fd | + | | | | | | | | |
| | d | 4 | 0.5 | 100 | 60 | M | M | | | 32.5 | 50 | 380 | 280 | 66.9 | | 590 | 300 |
| | | | | | | | | Cw | 5 | 33.0 | 50 | 160 | 130 | 33.2 | 33 | 290 | 140 |
| | | | | | | | | Fd | 3 | 34.0 | 50 | 120 | 90 | 23.4 | | 210 | 110 |
| | | | | | | | | Hw | 2 | 30.0 | 40 | 100 | 60 | 10.3 | | 90 | 50 |
| | | | | | | | | Dr | + | | | | | | | | |
| | e | 1 | 1.3 | 50 | 70 | M | G | | | 24.0 | 25 | 390 | 185 | 33.2 | | 170<br>200 | 220<br>260 |
| | | | | | | | | Dr | 10 | 24.0 | 25 | 340 | 135 | 15.9 | 27 | 170 | 220 |
| | | | | | | | | Cw | + | | | | | | | | |
| | | | | | | | | Hw | + | | | | | | | | |
| | | | | | | | | Vets | | | | | | | | | |
| | | | | | | | | Cw | | 34.0 | 70 | 30 | 30 | 12.3 | | 140 | 180 |
| | | | | | | | | Fd | | 36.0 | 65 | 10 | 10 | 3.4 | | 40 | 50 |
| | | | | | | | | Hw | | 30.0 | 45 | 10 | 10 | 1.6 | | 20 | 30 |

| Compartment | Cutting Type | Cutting Area ha | Cutting Trees/ha to leave | Planting Tree spp | Planting Area ha | Planting Seedlings per ha | Fertilization Type | Fertilization Area ha | Site preparation Methods | Site preparation Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| | CON | 0.2 | 140 | | 0.2 | 1260 | | | | | |
| | | | | Fd | 0.1 | 700 | | | | | |
| | | | | Cw | 0.1 | 560 | | | | | |
| | SAN | 0.5 | 350 | | | | | | | | |
| | CL.C | 0.8 | | | 0.8 | 1100 | | | | | |
| | | | | Dr | 0.8 | 1100 | | | | | |

**NOTES:** Dr with poor form; abundant Hw, Cw regen ; some exposed rock with Ar

**NOTES:** Cut 50% Dr; create small openings

**NOTES:** Plant Fd & Cw seedlings in the available space between the remaining Dr trees

**NOTES:** Several openings; some exposed rocks; age varies from 70-130 yr ; minor root rot

**NOTES:** Cut unhealthy trees

**NOTES:** Expected vol. - Cw 10 $m^3$, Hw 10 $m^3$

**NOTES:** Many small openings; vets in small clumps or scattered individually; frequent temporary drainage channels

**NOTES:** Cut the upper 0.4 ha first; after 5 yr, cut the next 0.4 ha

**NOTES:** Expected vol - Dr 140 $m^3$, Cw - $\frac{-}{80}$ $m^3$, Fd $\frac{-}{20}$ $m^3$, Hw $\frac{-}{10}$ $m^3$

| | | | | | | | | |

## APPENDIX 3. (Continued)

### STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| | e | 2 |

**DESCRIPTION**

| Area ha | Age yrs | Crown closure % | Growth class Actual | Growth class Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1.1 | 100 | 60 | M | G | | 35.0 | 50 | 420 | 290 | 75.3 | | 760 | 840 |
| | | | | | Cw 7 | 36.0 | 55 | 180 | 140 | 45.6 | 36 | 500 | 550 |
| | | | | | Hw 1 | 32.0 | 35 | 120 | 70 | 10.8 | | 100 | 110 |
| | | | | | Fd 1 | 38.0 | 50 | 60 | 40 | 11.8 | | 100 | 110 |
| | | | | | Dr 1 | 28.0 | 40 | 60 | 40 | 7.1 | | 60 | 70 |
| | | | | | Bg + | | | | | | | | |

**PLANNING**

| Cutting Type | Cutting Area ha | Cutting Trees/ha to leave | Planting Tree spp. | Planting Area ha | Planting Seedlings per ha | Fertilization Type | Fertilization Area ha | Site preparation Methods | Site preparation Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| SEED | 1.1 | 100 | | | | | | MAN | 1.1 | |

NOTES: Age varies from 60-120 yr.; some dense clumps of younger trees; several openings

NOTES: Cut Cw-70%, Hw-100%, Dr-100%, Fd-10%

Postpone

NOTES: Postpone until the next planning period; Expected vol. - Cw 380 $m^3$, Hw 110 $m^3$, Dr 70 $m^3$, Fd 10 $m^3$; expose mineral soil in spots

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | com. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb:Sw-Or/1 |
| 36 Edatope | 4-5/D |
| 37 Working group | eII |
| 38 Non-productive land % | |
| 39 Elevation (m) | 280 |
| 40 Aspect | NE |
| 41 Slope (%) | 25 |
| 42 Terrain | rolling |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen. | |
| 46 MAI ($m^3$/ha/year) | 7.6 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

| Compartment | Subcompartment | Stand | Area ha | Age yrs | Crown closure % | Growth class Actual | Growth class Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | e | 3 | 0.1 | 45 | 60 | M | G | | 22.5 | 30 | 540 | 280 | 29.2 | | 285 | 30 |
| | | | | | | | | Dr 9 | 23.0 | 30 | 370 | 240 | 25.1 | 26 | 250 | 30 |
| | | | | | | | | Hw 1 | 19.0 | 20 | 130 | 40 | 3.5 | | 30 | |
| | | | | | | | | Fd + | | | 40 | | 0.6 | | 5 | |
| | | | | | | | | Cw + | | | | | | | | |

| Cutting Type | Cutting Area ha | Cutting Trees/ha to leave | Planting Tree spp. | Planting Area ha | Planting Seedlings per ha | Fertilization Type | Fertilization Area ha | Site preparation Methods | Site preparation Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| CL.C | 0.1 | | | 0.1 | 1100 | | | | | |
| | | | Dr | 0.1 | 1100 | | | | | |

NOTES: Few large openings; Dr is not very straight

NOTES: Cut 100% Dr and Hw

NOTES: Expected vol. - Dr 30 $m^3$

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | com. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb:Sw-Or/1 |
| 36 Edatope | 4-5/D |
| 37 Working group | eIII |
| 38 Non-productive land % | |
| 39 Elevation (m) | 270 |
| 40 Aspect | E |
| 41 Slope (%) | 10 |
| 42 Terrain | rolling |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen. | |
| 46 MAI ($m^3$/ha/year) | 6.3 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

| Compartment | Subcompartment | Stand | Area ha | Age yrs | Crown closure % | Growth class Actual | Growth class Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | e | 4 | 0.1 | 45 | 70 | M | G | | 27.5 | 30 | 500 | 310 | 39.4 | | 400 | 40 |
| | | | | | | | | Fd 8 | 27.0 | 30 | 450 | 260 | 29.2 | 38 | 300 | 30 |
| | | | | | | | | Cw 2 | 29.0 | 40 | 50 | 50 | 10.2 | | 100 | 10 |

| Cutting Type | Cutting Area ha | Cutting Trees/ha to leave | Planting Tree spp. | Planting Area ha | Planting Seedlings per ha | Fertilization Type | Fertilization Area ha | Site preparation Methods | Site preparation Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| T1 | 0.1 | 420 | | | | | | | | |

NOTES: Age of Cw from 50-120 yr.; older Cw are rotten

NOTES: Cut Cw 10% Fd 10%

NOTES: Expected vol. - Cw 10 $m^3$

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | com. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb:Sw-Or/1 |
| 36 Edatope | 4-5/D |
| 37 Working group | eI |
| 38 Non-productive land % | |
| 39 Elevation (m) | 270 |
| 40 Aspect | NE |
| 41 Slope (%) | 10 |
| 42 Terrain | even |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen. | |
| 46 MAI ($m^3$/ha/year) | 8.9 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

## APPENDIX 3. (Continued)

### STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | e | 5 |

**DESCRIPTION**

| Area ha | Age yrs | Crown closure % | Growth class: Actual | Growth class: Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha: Total | Number of stems/ha: >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 1.9 | 50 | 70 | M | G | | 25.0 | 25 | 1180 | 380 | 52.8 | | 460<br>70 | 880<br>130 |
| | | | | | Fd 6 | 26.0 | 25 | 690 | 175 | 28.3 | 35 | 270 | 510 |
| | | | | | Dr 3 | 23.0 | 25 | 320 | 120 | 13.0 | | 120 | 230 |
| | | | | | Hw 1 | 26.0 | 20 | 70 | 40 | 2.5 | | 40 | 80 |
| | | | | | Cw + Vets | | | 80 | 30 | 2.2 | | 30 | 60 |
| | | | | | Cw | 33.0 | 70 | 15 | 15 | 5.8 | | 60 | 110 |
| | | | | | Fd | 36.0 | 80 | 2 | 2 | 1.0 | | 10 | 20 |

**PLANNING**

| Cutting: Type | Cutting: Area ha | Cutting: Trees/ha to leave | Planting: Tree spp | Planting: Area ha | Planting: Seedlings per ha | Fertilization: Type | Fertilization: Area ha | Site preparation: Methods | Site preparation: Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| T1 | 1.9 | 500 | | | | | | | | |

NOTES: Age varies from 35-65 yr.; many dense clumps; few patches of pure Dr; scattered Cw & Fd vets; numerous openings

NOTES: Cut Fd-10%, Dr-80%, Hw-100%, Cw vets-50%

Postpone

NOTES: Postpone until the next planning period; Expected vol. - Fd 50 $m^3$, Dr 170 $m^3$, Hw 80 $m^3$, Cw $\frac{-}{50}$ $m^3$

| | | | | | |
|---|---|---|---|---|---|
| 31 | Regulation class production | 35 | Site type CDFb:Sw-Or/1 | 39 | Elevation (m) 240 |
| 32 | Protection subclass | 36 | Edatope 4-5/D | 40 | Aspect NE |
| 33 | Silviculture class com. immature | 37 | Working group eI | 41 | Slope (%) 30 |
| 34 | Ownership status Crown land | 38 | Non-productive land % | 42 | Terrain broken |

| | | | | | |
|---|---|---|---|---|---|
| 43 | Undergrowth light | 47 | History record | | |
| 44 | Debris fine, light | 48 | Airphoto number BCC 249-030 | | |
| 45 | Natural regen | 49 | Year of survey 1985 | | |
| 46 | MAI ($m^3$/ha/year) 10.6 | 50 | Year of update | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | e | 6 | 0.1 | | | | G | | | | | | | | | | | | | | | 0.1 | 1200 | | | | | | |

NOTES: Cutover area

NOTES:

Fd 0.1 1200

NOTES:

| | | | | | |
|---|---|---|---|---|---|
| 31 | Regulation class production | 35 | Site type CDFb:Sw-Or/1 | 39 | Elevation (m) 230 |
| 32 | Protection subclass | 36 | Edatope 4-5/D | 40 | Aspect NE |
| 33 | Silviculture class N.S.R. | 37 | Working group eI | 41 | Slope (%) 20 |
| 34 | Ownership status Crown land | 38 | Non-productive land % | 42 | Terrain rolling |

| | | | | | |
|---|---|---|---|---|---|
| 43 | Undergrowth medium | 47 | History record | | |
| 44 | Debris coarse, light | 48 | Airphoto number BCC 249-030 | | |
| 45 | Natural regen | 49 | Year of survey 1985 | | |
| 46 | MAI ($m^3$/ha/year) | 50 | Year of update | | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | e | 7 | 0.1 | | | | G | | | | | | | | | | | | | | | 0.1 | 1200 | | | | | | |

NOTES: Cutover area

NOTES:

Fd 0.1 1200

NOTES:

| | | | | | |
|---|---|---|---|---|---|
| 31 | Regulation class production | 35 | Site type CDFb:Sw-Or/1 | 39 | Elevation (m) 270 |
| 32 | Protection subclass | 36 | Edatope 4-5/D | 40 | Aspect NE |
| 33 | Silviculture class N.S.R. | 37 | Working group eI | 41 | Slope (%) 20 |
| 34 | Ownership status Crown land | 38 | Non-productive land % | 42 | Terrain rolling |

| | | | | | |
|---|---|---|---|---|---|
| 43 | Undergrowth medium | 47 | History record | | |
| 44 | Debris coarse, light | 48 | Airphoto number BCC 249-030 | | |
| 45 | Natural regen | 49 | Year of survey 1985 | | |
| 46 | MAI ($m^3$/ha/year) | 50 | Year of update | | |

## APPENDIX 3. (Continued)

### STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | e | 8 |

**DESCRIPTION**

| Area ha | Age yrs | Crown closure % | Growth class Actual | Growth class Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area $m^2/ha$ | Site index | Volume $m^3/ha$ | Total volume $m^3$ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 0.6 | 45 | 70 | M | G | | 24.5 | 25 | 745 | 240 | 35.1 | | 340 | 200 |

**PLANNING**

| Cutting Type | Cutting Area ha | Cutting Trees/ha to leave | Planting Tree spp. | Planting Area ha | Planting Seedlings per ha | Fertilization Type | Fertilization Area ha | Site preparation Methods | Site preparation Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| T1 | 0.6 | 420 | | | | | | | | |

**NOTES:** Some openings; younger trees above the road; some Fd with poor stem form (forks); lots of dead Dr ; minor inclusion of Sa/lsk site type in SW corner

| Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area $m^2/ha$ | Site index | Volume $m^3/ha$ | Total volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| Fd 6 | 26.0 | 25 | 460 | 210 | 21.8 | 38 | 200 | 120 |
| Dr 4 | 22.0 | 25 | 225 | 130 | 12.1 | | 130 | 80 |
| Hw + | | | 60 | | 1.2 | | 10 | |
| Cw + | | | | | | | | |

**NOTES:** Cut 10% Fd, 100% Hw, 80% Dr

**NOTES:** Expected vol. - Fd 10 $m^3$, Dr 60 $m^3$

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | com. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb:Sw-Or/1 |
| 36 Edatope | 4-5/D |
| 37 Working group | eI |
| 38 Non-productive land % | |
| 39 Elevation (m) | 280 |
| 40 Aspect | NE |
| 41 Slope (%) | 25 |
| 42 Terrain | gullied |
| 43 Undergrowth | light |
| 44 Debris | coarse, light |
| 45 Natural regen. | |
| 46 MAI ($m^3/ha$/year) | 7.6 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | e | 9 | 0.2 | 130 | 60 | M | G | | | 34.0 | 65 | 260 | 165 | 71.9 | | 720 | 140 | SEED | 0.2 | 100 | | | | | | | MAN | 0.2 | |

**NOTES:** Some large openings; patch of smaller trees in N portion; most of Cw is rotten

| Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area $m^2/ha$ | Site index | Volume $m^3/ha$ | Total volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| Cw 7 | 32.0 | 60 | 175 | 100 | 54.3 | 29 | 520 | 100 |
| Fd 3 | 38.0 | 70 | 35 | 35 | 14.2 | | 180 | 40 |
| Dr + | | | 50 | 30 | 3.4 | | 20 | |
| Hw + | | | | | | | | |

**NOTES:** Cut Cw-60%, Dr-100%, Fd-10%

**NOTES:** Expected vol. - Cw 60 $m^3$, expose mineral soil in spots

| | |
|---|---|
| 31 Regulation class | production |
| 32 Protection subclass | |
| 33 Silviculture class | mature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb:Sw-Or/1 |
| 36 Edatope | 4-5/D |
| 37 Working group | eII |
| 38 Non-productive land % | |
| 39 Elevation (m) | 310 |
| 40 Aspect | NE |
| 41 Slope (%) | 25 |
| 42 Terrain | rolling |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen. | |
| 46 MAI ($m^3/ha$/year) | 5.5 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | e | 10 | 0.3 | 40 | 70 | M | G | | | 22.0 | 20 | 700 | 180 | 26.2 | | 240 | 70 | CL.C | 0.3 | 100 | | 0.3 | 1100 | | | | | | |

**NOTES:** Above the road the trees are smaller and very branchy; several small openings

| Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area $m^2/ha$ | Site index | Volume $m^3/ha$ | Total volume $m^3$ |
|---|---|---|---|---|---|---|---|---|
| Dr 10 | 22.0 | 20 | 700 | 180 | 26.2 | 28 | 240 | 70 |
| Fd + | | | | | | | | |
| Cw + | | | | | | | | |

**NOTES:** Cut 90%; leave trees in steep ravine along creek

**NOTES:** Expected vol. - Dr 60 $m^3$

| | |
|---|---|
| 31 Regulation class | produciton |
| 32 Protection subclass | |
| 33 Silviculture class | com. immature |
| 34 Ownership status | Crown land |
| 35 Site type | CDFb:Sw-Or/1 |
| 36 Edatope | 4-5/D |
| 37 Working group | eIII |
| 38 Non-productive land % | |
| 39 Elevation (m) | 330 |
| 40 Aspect | E |
| 41 Slope (%) | 15 |
| 42 Terrain | gullied |
| 43 Undergrowth | light |
| 44 Debris | fine, light |
| 45 Natural regen. | |
| 46 MAI ($m^3/ha$/year) | 6.0 |
| 47 History record | |
| 48 Airphoto number | BCC 249-030 |
| 49 Year of survey | 1985 |
| 50 Year of update | |

## APPENDIX 3. (Concluded)

### STAND DESCRIPTION AND PLANNING TABLE

**IDENTIFICATION**

| Compartment | Subcompartment | Stand |
|---|---|---|
| 1 | 2 | 3 |
| | e | 11 |

**DESCRIPTION**

| Area ha | Age yrs | Crown closure % | Growth class Actual | Growth class Potential | Tree species composition | Height m | Dbh cm | Number of stems/ha Total | Number of stems/ha >22.5 cm | Basal area m²/ha | Site index | Volume m³/ha | Total volume m³ |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 4 | 5 | 6 | 7 | 8 | 9 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 |
| 0.1 | 120 | 50 | M | G | | 31.0 | 60 | 180 | 140 | 45.2 | | 380 | 40 |

**PLANNING**

| Cutting Type | Cutting Area ha | Cutting Trees/ha to leave | Planting Tree spp. | Planting Area ha | Planting Seedlings per ha | Fertilization Type | Fertilization Area ha | Site preparation Methods | Site preparation Area ha | Priority |
|---|---|---|---|---|---|---|---|---|---|---|
| 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 28 | 29 | 30 |
| SEED | 0.1 | 80 | | | | | | MAN | 0.1 | |

**NOTES:** Very open; Cw branchy; patches with heavy salal

| | | | |
|---|---|---|---|
| Cw | 5 | 30.0 | 70 | 50 | 50 | 19.6 | 29 | 180 | 20 |
| Fd | 3 | 33.0 | 60 | 40 | 40 | 12.5 | | 110 | 10 |
| Hw | 2 | 30.0 | 45 | 90 | 50 | 13.1 | | 90 | 10 |
| Dr | + | | | | | | | | |
| Mb | + | | | | | | | | |

**NOTES:** Cut Cw-20%, Hw-100%

**NOTES:** Expected Vol. - Hw 10 $m^3$, expose mineral soil in spots

| | | | |
|---|---|---|---|
| 31 | Regulation class | production | |
| 32 | Protection subclass | | |
| 33 | Silviculture class | mature | |
| 34 | Ownership status | Crown land | |
| 35 | Site type | CDFb:Sw-Or/1 | |
| 36 | Edatope | 4-5/D | |
| 37 | Working group | eII | |
| 38 | Non-productive land % | | |
| 39 | Elevation (m) | 350 | |
| 40 | Aspect | E | |
| 41 | Slope (%) | 10 | |
| 42 | Terrain | rolling | |
| 43 | Undergrowth | medium | |
| 44 | Debris | fine, light | |
| 45 | Natural regen | | |
| 46 | MAI ($m^3$/ha/year) | 3.0 | |
| 47 | History record | | |
| 48 | Airphoto number | BCC 249-030 | |
| 49 | Year of survey | 1985 | |
| 50 | Year of update | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| | f | 1 | 0.3 | 45 | 70 | M | G | | | 24.0 | 25 | 700 | 250 | 28.8 | | 300 | 90 | CON | 0.3 | | | 0.3 | 1200 | | | | | | |

**NOTES:** Large Cw stumps; lots of dead small trees

| | | | |
|---|---|---|---|
| Dr | 10 | 24.0 | 25 | 700 | 250 | 28.8 | 28 | 300 | 90 |
| Hw | + | | | | | | | | |

**NOTES:** Cut 100% Dr

| | | | |
|---|---|---|---|
| Cw | 0.3 | 1200 |

**NOTES:** Expected vol.- Dr 90 $m^3$

| | | | |
|---|---|---|---|
| 31 | Regulation class | production | |
| 32 | Protection subclass | | |
| 33 | Silviculture class | com. immature | |
| 34 | Ownership status | Crown land | |
| 35 | Site type | CDFb:Sw/g | |
| 36 | Edatope | 6/E | |
| 37 | Working group | fI | |
| 38 | Non-productive land % | | |
| 39 | Elevation (m) | 270 | |
| 40 | Aspect | N | |
| 41 | Slope (%) | 10 | |
| 42 | Terrain | even | |
| 43 | Undergrowth | light | |
| 44 | Debris | fine, light | |
| 45 | Natural regen | | |
| 46 | MAI ($m^3$/ha/year) | 6.7 | |
| 47 | History record | | |
| 48 | Airphoto number | BCC 249-030 | |
| 49 | Year of survey | 1985 | |
| 50 | Year of update | | |

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 | 22 | 23 | 24 | 25 | 26 | 27 | 28 | 29 | 30 |
| | f | 2 | 0.1 | 40 | 70 | M | G | | | 23.0 | 20 | 800 | 200 | 27.6 | | 260 | 30 | CON | 0.3 | | | 0.1 | 1200 | | | | | | |

**NOTES:** Some spots with open water

| | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Dr | 10 | 23.0 | 20 | 800 | 200 | 27.6 | 28 | 260 | 30 |
| Hw | + | | | | | | | | |
| Cw | + | | | | | | | | |
| Fd | + | | | | | | | | |

**NOTES:** Cut 100% Dr

| | | |
|---|---|---|
| Cw | 0.1 | 1200 |

**NOTES:** Expected vol. - Dr 30 $m^3$

| | | | |
|---|---|---|---|
| 31 | Regulation class | production | |
| 32 | Protection subclass | | |
| 33 | Silviculture class | com. immature | |
| 34 | Ownership status | Crown land | |
| 35 | Site type | CDFb:Sw/g | |
| 36 | Edatope | 6/E | |
| 37 | Working group | fI | |
| 38 | Non-productive land % | | |
| 39 | Elevation (m) | 400 | |
| 40 | Aspect | S | |
| 41 | Slope (%) | 5 | |
| 42 | Terrain | even | |
| 43 | Undergrowth | light | |
| 44 | Debris | fine, light | |
| 45 | Natural regen | | |
| 46 | MAI ($m^3$/ha/year) | 6.5 | |
| 47 | History record | | |
| 48 | Airphoto number | BCC 249-030 | |
| 49 | Year of survey | 1985 | |
| 50 | Year of update | | |

## APPENDIX 4. Definition of terms used in the stand description and planning tables[a]

(A) Identification: parameters 1 to 3

| | | |
|---|---|---|
| 1. | Compartment | designated by number |
| 2. | Subcompartment | designated by letter |
| 3. | Stand | designated by number |

(B) Description: parameters 4 to 18

| | | |
|---|---|---|
| 4. | Area | rounded to 0.1 ha |
| 5. | Age | average stand age; rounded to 5 yr |
| 6. | Crown closure | rounded to 5% |
| 7. | Actual growth class | based on site index of present major tree species |
| 8. | Potential growth class | the potential growth class for the most suitable species (may not correspond to the existing site index) |
| 9. | Tree species | **Symbol** — **Common Name**<br>Ar — arbutus<br>Bg — grand fir<br>Cw — western redcedar<br>Dr — red alder<br>Fd — Douglas-fir<br>Hw — western hemlock<br>Mb — bigleaf maple<br>Pl — lodgepole pine<br>Pw — western white pine |
| 10. | Tree species composition | indicates % of total volume/ha for a particular species:<br>1 - 5% - +<br>6 - 15% - 1<br>16 - 25% - 2<br>. . - .<br>. . - .<br>. . - .<br>86 - 95% - 9<br>95% + - 10<br>in case of stands with average dbh <7.5 cm, indicates % of total number of stems/ha |
| 11. | Height | average height of co-dominant and dominant trees; rounded to 0.5 m |
| 12. | Dbh | average stand diameter at breast height (quadratic mean diamter outside bark); rounded to 5 cm |
| 13. | Total number of stems/ha | number of living trees >7.5 cm dbh; rounded to 10 |

[a] Same terms are used in the compartment summary table.

| | | |
|---|---|---|
| 14. | Number of stems/ha >22.5 cm | number of living trees >22.5 cm dbh; rounded to 5 |
| 15. | Basal area | outside bark at 1.3 m; rounded to 0.1 $m^2$ |
| 16. | Site index | at 100 yr (B.C. Forest Service 1979) |
| 17. | Volume/ha | gross volume at close utilization (the gross volume between a 30 cm high stump and a 10 cm top diameter inside bark) of living trees; rounded to 5 $m^3$ |
| 18. | Total volume | gross volume at close utilization; rounded to 10 $m^3$ |

The data from No. 9 to 18 is presented by species and as total or average for the stand.

Descriptive notes under No. 1-8 relate to:

a) heterogeneity of the stand — variability in age, density, height, dbh, etc.
b) pathology — damage, damaging agents, etc.
c) trafficability — brush, slash, decaying wood, etc.
d) understory
e) multiple use potential
f) sensitive soil
g) accessibility
h) flooding hazard, etc.

(C) Planning: parameters 19 to 30

| | | | |
|---|---|---|---|
| 19. | Type of stand treatment | NONE | - no treatment |
| | | CI | - cleaning |
| | | W | - weeding |
| | | TI | - low thinning |
| | | Tc | - crown thinning |
| | | P | - pruning |
| | | SALV | - salvage cutting |
| | | SAN | - sanitation cutting |
| | | CON | - conversion |
| | | CL.C | - clearcutting |
| | | PREP | - shelterwood, preparatory phase |
| | | SEED | - shelterwood, seed phase |
| | | REM | - shelterwood, removal phase |
| | | SEL | - selection cutting |
| 20-24, 26, 29. | | self explanatory | |

Descriptive notes under No. 19 - 21 relate to:

a) cutting intensity as % of volume
b) species to cut or leave
c) machinery, etc.

| | | | |
|---|---|---|---|
| 25. | Type of fertilizer | UREA | - urea |
| | | AMNI | - ammonium nitrate |
| | | AMSU | - ammonium sulfate |
| | | | - etc. |

27. Site sensitive to fire

VL - very low
L - low
M - medium
H - high
VH - very high

See Klinka *et al.* (1984)

28. Method of site preparation

MAN - manual
MECH - mechanical
FIRE - prescribed fire
CHEM - chemical
COM - combination

30. Treatment priority

U - urgent; the stand should be treated immediately
H - high; treatment in the next 1-2 yr
M - medium; treatment in the next 3-5 yr
L - low; treatment in the next 6-10 yr

Descriptive notes under No. 25-30 relate to:

a) stock type of seedlings
b) rate of fertilizer application
c) particulars of site preparation
d) equipment requirements
e) expected volume per species, etc.

(D) Miscellaneous: parameters No. 31-50

31. Regulation class

i) forest land — land currently supporting or capable of supporting crops of trees, forage, or both and which is considered to provide the greatest contribution to the welfare of the province if it is maintained under forest management
   a) production — forest land maintained primarily for timber production; no harvesting constraints
   b) protection — forest land designated for resource protection, with harvesting constraints
   c) range — forest land maintained primarily for grazing, hay production, or both
ii) non-forest land — land (such as rocks, lakes, etc.) surrounded by or adjacent to forest land but currently incapable of supporting crops of trees of forage.

32. Protection subclass

i) harvestable — conditionally available for harvesting or grazing, with constraints
   a) water supply
   b) recreation
   c) wildlife
   d) non-feasible regeneration
   e) fire break
   f) pollution control
   g) erosion control, etc.
ii) non-harvestable — no harvesting or grazing permitted (except sanitation or salvage cuttings)

a) active avalanche
b) seed production
c) clone bank
d) ecological reserve, etc.

33. Silviculture class

a) NSR — not satisfactorily restocked
b) regeneration plantation — planted, stocked stands with average height up to 2.5 m
c) regeneration natural — naturally stocked stands with average height up to 2.5 m
d) juvenile immature — average stand height from 2.5 to 10 m
e) precommercial immature — average stand height 10-20 m
f) commercial immature — average stand height >20 m
g) mature — current age for maturity is defined as 120 yr; under intensive management this will be significantly lowered and will vary depending on site quality and management objectives
h) overmature — decadent stands with negative or no net yield

34. Ownership status

legal ownership status

35. Site type

dominant site type

36. Edatope

potential (relative) soil moisture/soil nutrient regime

37. Working group

designated by a subcompartment letter and Roman numeral

38. % non-productive land

land from total stand area which is non-productive; rounded to 5%

39. Elevation

rounded to 10 m

40. Aspect

in general cardinal directions: N, NE, E, SE, S, SW, W, NW

41. Slope

rounded to 5%

42. Terrain

Terrain is classified according to differences in the configuration of local relief; that is the height or depth and slope of "elevations" (mounds, hillocks, ridges) or "depressions" (channels, hollows ); modified from the Ministry of Forests, Vancouver Forest Region Appraisal Guide, 1980

i) even — no elevation or depression >3 m; local slope <10%
ii) rolling — at least one elevation or depression:
  a) >3 m with local slope <30%
  b) <3 m with local slope >10-80%
iii) gullied — at least one elevation or depression:
  a) >3 m with local slope 30-80%
  b) <3 m with local slope >80%
iv) broken — at least one elevation or depression is >3 m with local slope >80%

43. Undergrowth

a) light — does not affect walking
b) medium — affects walking
c) heavy — difficult walking; influences work
d) very heavy — very difficult walking; influences work greatly

| | |
|---|---|
| 44. Debris | i) fine debris:<br>a) light — scattered branches and tops<br>b) medium — grouped branches and tops less than 1 m high, loose arrangement<br>c) heavy — piled branches and tops, more than 1 m high or in a continuous mat<br>ii) coarse debris:<br>a) light — scattered logs<br>b) medium — frequent logs, some grouped and crossed, less than 1 m high<br>c) heavy — frequent logs, grouped and crossed, more than 1 m high |
| 45. Natural regeneration | i) insufficient — less than 40% of the target regen/ha<br>ii) questionable -<br>a) 40-80% of the target regen/ha with tendency for more regen<br>b) more than 80% of the target seedlings/ha but in poor vigour<br>iii) sufficient — over 80% of the target regen/ha, good vigour |
| 46. MAI | mean annual increment rounded to 0.1 $m^3$/ha per yr |
| 47. History record | reference to records of previous stand treatment |
| 48-50. | self explanatory |

# APPENDIX 5. Compartment summary

**COMPARTMENT SUMMARY : Compartment** Saltspring Island study area

| Regulation and growth class | Subcompartment | Stand | Area and volume by silviculture class | | | | | | | | | | | Total | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | NSR | Regeneration plantation | Regeneration natural | Juvenile immature | Precommercial immature | Commercial immature | | Mature | | Overmature | | Coniferous | | Deciduous | | Coniferous and deciduous | | Non-forest land |
| | | | | | | | | Area | Volume | Area | Volume | Area | Volume | Area | Volume | Area | Volume | Area | Volume | Area |
| | | | Area in ha | | | | | ha | $m^3$ | ha | $m^3$ | ha | $m^3$ | ha | $m^3$ | ha | $m^3$ | ha | $m^3$ | ha |
| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
| Forest land | total | | 0.2 | | | 0.1 | 6.3 | 12.0 | 4730/460 | 7.5 | 2980 | | | 22.6 | 7620/490 | 3.5 | 1020 | 26.1 | 8640/490 | |
| Production | total | | 0.2 | | | | 2.5 | 12.0 | 4730/460 | 7.5 | 2980 | | | 18.7 | 7120/490 | 3.5 | 1020 | 22.2 | 8140/490 | |
| poor | total | | | | | | 1.8 | | | 6.9 | 2540 | | | 8.7 | 2800/10 | | | 8.7 | 2800/10 | |
| | b | 1 | | | | | | | | 0.1 | 30 | | | 0.1 | 30 | | | 0.1 | 30 | |
| | b | 2 | | | | | 0.6 | | | | | | | 0.6 | 70 | | | 0.6 | 70 | |
| | b | 3 | | | | | | | | 4.2 | 1600 | | | 4.2 | 1600 | | | 4.2 | 1600 | |
| | b | 4 | | | | | 0.5 | | | | | | | 0.5 | 80 | | | 0.5 | 80 | |
| | b | 5 | | | | | | | | 1.9 | 650 | | | 1.9 | 650 | | | 1.9 | 650 | |
| | b | 6 | | | | | 0.4 | | | | | | | 0.4 | 40/10 | | | 0.4 | 40/10 | |
| | b | 7 | | | | | | | | 0.7 | 260 | | | 0.7 | 260 | | | 0.7 | 260 | |
| | b | 8 | | | | | 0.3 | | | | | | | 0.3 | 70 | | | 0.3 | 70 | |
| medium | total | | 0.2 | | | | 0.7 | 12.0 | 4730/460 | 0.6 | 440 | | | 10.0 | 4320/480 | 3.5 | 1020 | 13.5 | 5340/480 | |
| | c | 1 | | | | | 0.7 | | | | | | | 0.7 | 160/20 | - | 10 | 0.7 | 170/20 | |
| | c | 2 | | | | | | 0.7 | 210/20 | | | | | 0.7 | 190/20 | - | 20 | 0.7 | 210/20 | |
| | c | 3 | | | | | | 0.4 | 200 | | | | | 0.4 | 200 | | | 0.4 | 200 | |
| | c | 4 | | | | | | 1.3 | 400 | | | | | 1.0 | 310 | 0.3 | 90 | 1.3 | 400 | |
| | c | 5 | | | | | | 0.4 | 230 | | | | | 0.4 | 210 | - | 20 | 0.4 | 230 | |
| | c | 6 | | | | | | 1.2 | 280/50 | | | | | 1.2 | 280/50 | | | 1.2 | 280/50 | |
| | c | 7 | | | | | | 0.5 | 140 | | | | | 0.5 | 140 | | | 0.5 | 140 | |
| | c | 8 | | | | | | 0.4 | 120 | | | | | 0.4 | 120 | | | 0.4 | 120 | |
| | c | 9 | | | | | | | | 0.3 | 260 | | | 0.3 | 250 | - | 10 | 0.3 | 260 | |
| | d | 1 | | | | | | 0.2 | 90 | | | | | 0.2 | 90 | | | 0.2 | 90 | |
| | d | 2 | | | | | | 0.4 | 320 | | | | | 0.4 | 310 | - | 10 | 0.4 | 320 | |

## APPENDIX 5. (Continued)

**COMPARTMENT SUMMARY : Compartment** .....

Page .....

| 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 | 18 | 19 | 20 | 21 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | d | 3 | | | | | | 0.2 | 40 | | | | | | | | | | | |
| | d | 4 | | | | | | 0.5 | 300 | | | | | | | 0.2 | 40 | 0.2 | 40 | |
| | e | 1 | | | | | | 1.3 | 220/260 | | | | | 0.5 | 300/- | | | 0.5 | 300 | |
| | e | 2 | | | | | | 1.1 | 840 | | | | | - | | 1.3 | 220 | 1.3 | 220/260 | |
| | e | 3 | | | | | | 0.1 | 30 | | | | | 1.0 | 770 | 0.1 | 70 | 1.1 | 840 | |
| | e | 4 | | | | | | 0.1 | 40 | | | | | | | 0.1 | 30 | 0.1 | 30 | |
| | e | 5 | | | | | | 1.9 | 880/130 | | | | | 0.1 | 40 | | | 0.1 | 40 | |
| | e | 6 | 0.1 | | | | | | | | | | | 1.3 | 650/130 | 0.6 | 230 | 1.9 | 880/130 | |
| | e | 7 | 0.1 | | | | | | | | | | | 0.1 | - | | | 0.1 | - | |
| | e | 8 | | | | | | 0.6 | 200 | | | | | 0.1 | - | | | 0.1 | - | |
| | e | 9 | | | | | | | | 0.2 | 140 | | | 0.4 | 120 | 0.2 | 80 | 0.6 | 200 | |
| | e | 10 | | | | | | 0.3 | 70 | | | | | 0.2 | 140 | | | 0.2 | 140 | |
| | e | 11 | | | | | | | | 0.1 | 40 | | | | | 0.3 | 70 | 0.3 | 70 | |
| | f | 1 | | | | | | 0.3 | 90 | | | | | 0.1 | 40 | | | 0.1 | 40 | |
| | f | 2 | | | | | | 0.1 | 30 | | | | | | | 0.3 | 90 | 0.3 | 90 | |
| Protection | total | | | | | 0.1 | 3.8 | | | | | | | | | 0.1 | 30 | 0.1 | 30 | |
| low | total | | | | | 0.1 | 3.8 | | | | | | | 3.9 | 500 | | | 3.9 | 500 | |
| | a | 1 | | | | | 0.3 | | | | | | | 3.9 | 500 | | | 3.9 | 500 | |
| | a | 2 | | | | | 1.7 | | | | | | | 0.3 | 30 | | | 0.3 | 30 | |
| | a | 3 | | | | | 1.7 | | | | | | | 1.7 | 340 | | | 1.7 | 340 | |
| | a | 4 | | | | 0.1 | | | | | | | | 1.7 | 120 | | | 1.7 | 120 | |
| | a | 5 | | | | | 0.1 | | | | | | | 0.1 | - | | | 0.1 | - | |
| Non-forest land | total | | | | | | | | | | | | | 0.1 | 10 | | | 0.1 | 10 | |
| road | total | | | | | | | | | | | | | | | | | | | 3.7 |
| | 1 | | | | | | | | | | | | | | | | | | | 3.1 |
| | 3 | | | | | | | | | | | | | | | | | | | 0.1 |
| rock | total | | | | | | | | | | | | | | | | | | | 3.0 |
| | 2 | | | | | | | | | | | | | | | | | | | 0.6 |
| | 4 | | | | | | | | | | | | | | | | | | | 0.2 |
| | 5 | | | | | | | | | | | | | | | | | | | 0.1 |
| | 6 | | | | | | | | | | | | | | | | | | | 0.1 |
| | | | | | | | | | | | | | | | | | | | | 0.2 |
| Grand total Crown land | 29.8 ha | | | | | | | | | | | | | | | | | | | |

## APPENDIX 6. List of plant species

| | |
|---|---|
| **Trees** | |
| arbutus | *Arbutus menziesii* Pursh |
| bigleaf maple | *Acer macrophyllum* Pursh |
| Douglas-fir | *Pseudotsuga menziesii* (Mirb.) Franco |
| grand fir | *Abies grandis* (Dougl. *ex* D. Don) Lindl. |
| lodgepole pine | *Pinus contorta* Dougl. *ex* Loud. |
| red alder | *Alnus rubra* Bong. |
| western hemlock | *Tsuga heterophylla* (Raf.) Sarg. |
| western redcedar | *Thuja plicata* Donn *ex.* D. Don in Lamb. |
| western white pine | *Pinus monticola* Dougl. *ex.* D. Don in Lamb. |
| **Shrubs** | |
| baldhip rose | *Rosa gymnocarpa* Nutt. in Torr. & Gray |
| ocean-spray | *Holodiscus discolor* (Pursh) Maxim. |
| Oregon-grape | *Mahonia nervosa* (Pursh) Nutt. |
| red huckleberry | *Vaccinium parvifolium* Sm. in Rees |
| salal | *Gaultheria shallon* Pursh Herbs |
| **Herbs** | |
| wall-lettuce | *Mycelis muralis* (L.) Dumort. |
| stinging nettle | *Urtica dioica* L. |
| sweet-scented bedstraw | *Galium triflorum* Michx. |
| sword fern | *Polystichum munitum* (Kaulf.) Presl |
| vanilla leaf | *Achlys triphylla* (Sm.) DC. |
| **Graminoids** | |
| Canada wildrye | *Elymus canadensis* L. |
| Columbia brome | *Bromus vulgaris* (Hook.) Shear |
| crinkle-awned fescue | *Festuca subuliflora* Scribn. in Macoun |
| Dewey's sedge | *Carex deweyana* Schwein |
| early hairgrass | *Aira praecox* L. |
| weak false-manna | *Torreyochloa pauciflora* (Presl.) Church |
| western fescue | *Festuca occidentalis* Hook. |
| **Mosses** | |
| | *Hylocomium splendens* (Hedw.) B.S.G. |
| | *Kindbergia oregana* (Sull.) Ochyra |
| | *Polytrichum juniperinum* Hedw. |
| | *Rhacomitrium canescens* (Hedw.) Brid. |
| | *Rhytidiadelphus triquetrus* (Hedw.) Warnst. |

| Plot number | 07 | 10 | 21 | 06 | 22 | 24 | 08 | 23 | 25 | 01 | 20 | 18 | 15 | 17 | 02 | 04 | 09 | 12 | 13 | 14 | 16 | 11 |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Site type[a] | 1 | 2 | 3 | 4 | 4 | 4 | 5 | 5 | 5 | 6 | 6 | 6 | 7 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 8 | 9 |
| Elevation (m) | 320 | 250 | 380 | 290 | 380 | 400 | 340 | 370 | 290 | 320 | 380 | 310 | 260 | 290 | 270 | 280 | 240 | 240 | 260 | 270 | 240 | 340 |
| Slope gradient (degrees) | var | 25 | 30 | 10 | 25 | 5 | 45 | 55 | 40 | 15 | 30 | 25 | 80 | 40 | 11 | 15 | 27 | 35 | 25 | 0 | 20 | 0 |
| Aspect | E | NE | NE | NE | E | SE | S | SE | E | NE | NE | NE | NE | NE | N | E | NE | NE | N | | E | |
| Slope position[b] | ridg | up | up | up | up | ridg | mid | mid | mid | mid | low | mid | mid | mid | dep | low | mid | mid | mid | flat | low | flat |
| Slope shape[c] | cvex | cvex | cvex | cvex | strt | strt | strt | cvex | strt | cvex | cave | strt | strt | strt | cave | cave | strt | strt | cvex | strt | cvex | cave |
| Terrain[d] | brok | brok | roll | roll | even | even | even | even | roll | guld | roll | even | even | even | guld | even | even | even | even | even | even | even |
| Exposed rock (%) | 60 | 30 | 20 | | | | | | | | 10 | 4 | | | 2 | | | 25 | 5 | | | |
| Potential soil moisture regime | 0-1 | 1 | 2 | 2 | 2 | 3 | 3 | 3 | 4 | 3 | 4 | 4 | 3 | 4 | 5 | 5 | 4 | 4 | 4 | 5 | 4 | 6 |
| Soil nutrient regime | C | B | B | B | B | B | C | C | B | C | C | C | D | D | D | D | D | D | D | D | D | E |
| Soil depth (cm) | <25 | 25-5 | 25-5 | 5-1 | 5-1 | >1m | >1m | >1m | >1m | 5-1 | >1m | >1m | >1m | >1m | >1m | >1m | >1m | >1m | >1m | >1m | >1m | >1m |
| Soil particle size[e] | SL | SL | SL | SL | SL | SL | SL | LS | LS | SL | SL | SL | SL | SL | L | SL | SL | SL | SL | SL | SL | SiL |
| Soil base status[f] | M | M | M | H | M | M | H | M | M | H | M | M | H | H | H | H | M | H | M | H | H | H |
| Soil colour[g] | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | M | D |
| Coarse fragment lithology[h] | MF | MF | G | MX | G | G | MF | G | G | V | G | MF | MF | MF | MX | MX | MF | MF | MF | MF | MF | |
| Coarse fragments (%) | 1035 | >70 | 3570 | 3570 | 3570 | 3570 | 3570 | 3570 | 1035 | 3570 | 3570 | 1035 | >70 | 1035 | 1035 | 1035 | 1035 | 1035 | 1035 | 1035 | 1035 | <10 |
| A horizon | | | Ae | Ae | Ae | Ae | | Ae | | Ae | Ae | | Ah | Ah | Ae | | | Ah | | Ah | Ah | Ah |
| A horizon thickness (cm) | | | 2.0 | 1.0 | 3.0 | 0.5 | | 1.0 | | 1.5 | 2.0 | | 9.0 | 4.0 | 1.0 | | | 2.0 | | 2.0 | 5.0 | 7.0 |
| Seepage/groundwater table depth | | | | | | | | | | | | | | | | | | | | | | 35 |
| Gleyed horizon depth (cm) | | | | | | | | | | | | | | | | | | | | | | 20 |
| Thickness humus form (cm) | 2 | 3 | 5 | 3 | 13 | 3 | 2 | 10 | 1 | 8 | 16 | 3 | 8 | 10 | 9 | 10 | 8 | 3 | 5 | 3 | 7 | 7 |
| Humus form[i] | Mod | Mor | Mor | Mor | Mor | Mor | Mod | Mor | Mor | Mor | Mor | Mor | Mod | Mod | Mod | Mod | Mod | Mod | Mod | Mod | Mod | Mul |

[a] 1- Fd-Ar/r, 2- Sa/sh, 3-Sa/sl-sh, 4-Sa/lsk, 5- Sa-Or/sl-lsk, 6- Sa-Or/lsk, 7- Sa-Or/ssl-lsk, 8- Sw-Or/l, 9- Sw/g

[b] ridg - ridge crest, up - upper, mid - middle, low - lower, flat - flats, dep - depressions

[c] cvex - convex, cave - concave, strt - straight

[d] even - even, roll - rolling, guld - gullied, brok - broken, (See APPENDIX 4)

[e] LS - loamy sand, SL - sandy loam, L - loam, SiL - silt loam

[f] L - low, M - medium, H - high

[g] L - light, M - medium, D - dark

[h] MF - fine metamorphic, G - granitic, V - volcanic, MX - mixed

[i] Mor - Mor, Mod - Moder, Mul - Mull

MAPS
NOT
FILMED

CARTES
OMISES